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Transcending Postmodernism

Morton A. Kaplan

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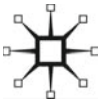

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To Azie, my wife, the light and joy of my life, who is much more intelligent than I am except on abstruse topics of academia

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Foreword

I am honored by Morton Kaplan's invitation to write a brief foreword for this extraordinary work. Morton and I are both professionally trained in physics and philosophy, and we both have addressed a common topic – the philosophical integration of 'worldly' scientific knowledge. We do so, however, in different but complementary ways. Kaplan searches for formal objective scientific theories and writes in the spirit of analytic philosophy. He finds, however, that analytics needs to be supplemented by pragmatics. The clarity of his analysis is wonderful. I write, however, in the complementary spirit of hermeneutical phenomenology focused on the correlative subjective philosophical context within which it is possible for the 'world' to be construed by scientists and others as 'objective'. The beauty, strength and success of Kaplan's work is, in my view, his awareness of the practical 'complementarity' of these approaches. He uses with ease philosophical arguments that transcend formal logic and that derive their meaning from the context of implied values and practical existential intentions. This argumentation is often hermeneutical and phenomenological.

One of the aspects that I noted as special in Kaplan's work was his move towards pragmatism. This was a hermeneutical move for reasons given above. Kaplan made such moves cleverly by relying on the reader's natural ability to make hermeneutical moves which come naturally in such situations; he did not display how they complement the logical analytic inquiry that he was making. What I mean is that Kaplan was able to bring his reader with him without implying that the structure of meaning-making that we buy into naturally goes beyond logical analysis, as if the reader were unaware both that Kaplan was using it, and that it was coherent with Main Street Anglophone logical analysis, which it is not. I think that this in itself is a mark of real genius – Kaplan's transcending the logical norm again and again, without making an issue of it.

I strongly endorse *Transcending Postmodernism* – not just because it is a bridge between the complementary schools of analytic and hermeneutical philosophy of science, but because of the extraordinary scholarship and exquisite clarity that it exhibits throughout.

Patrick A. Heelan

Preface

Our postmodern philosophical period has produced two powerful but contending paradigms: one based on analytical theory and the other on pragmatic meanings or practice. They have their origins in Greek philosophy which, since its earliest days, has alternated between a quest for the correct designations of objects external to minds and a quest for the correct analytics to apply to the relations of objects. The quest that emphasizes pragmatics rests on meaning. Analytics, on the other hand, provides a foundation for theory. When these quests avoided major puzzles in past periods, a world view sometimes resulted within the orbit of which many different areas of knowledge had an understandable place.

The very first chapter stresses correlatives as the building blocks of qualitative knowledge. I will show that the polar terms of correlatives cannot be understood independently. This is true of correlatives such as analytics and pragmatics. It is also true of ontology and epistemology. For instance, the use of instruments that can read objects at the particle level changed judgments about the ontology of objects such as photons. In turn, these evolved designations produced modified understandings of how different instruments, whether neurological systems or electron microscopes, are related to objects that are external to agents.

Thus, the contrary terms of correlatives are related in an evolving process that rests on their complementary character *within the framework of a contemporary world view*. I will show throughout the first chapter that the polar terms of correlatives are *not independently meaningful*. The addendum to Chapter 3 illustrates this claim in detail with respect to the concept of freedom while the addendum to Chapter 1 shows in detail the complementarity between pragmatics and theory.

Epistemology, thus, is *not a subjective matter* that is distinct from a world of objects but a complementary part of an evolutionary *process that dialectically produces objects of knowledge*. Ontology and epistemology cannot be understood independently. They complement each other. And our understanding of them, as I will show in the first chapter, evolves dialectically.

Part I should be easily accessible to students. A deeper understanding of why my version of a post-postmodern paradigm is preferable to contemporary alternatives will be enhanced by familiarity with the technical

discussions of Part II on analytics, which center on mathematical logic and physics, subjects that often are central to the development of world views. Although undergraduate students, and even graduate students, who are not at least acquainted with the philosophy of science, may find Part II difficult, even the modest understanding of these technical issues that Part II provides will empower the understandings of the most engaged students.

Because of the philosophically important differences between general theories and systems theories, this subject will be explored in Part III. And because the literature in the area of the theory of international relations suffers from a multitude of philosophical errors, I will use Part III to clarify these issues in a way that students can apply to discussions of theory throughout the social sciences.

Part IV deals with the analysis of different types of evolved systems from the perspective of complementarity. From the examination of international theory, constitutional law, and the character of the polity, the analysis draws upon complementarity to relate the subject matters to an appropriate world view.

I should stress that a world view is not a theory of the world. World views are not directly related to the analytic forms of theory I discuss in Chapter 6. They are pragmatic *assessments* of how theories and pragmatic knowledge mutually complement each other at a particular stage of knowledge. They lie in the realm of judgment. And they evolve as information changes. The second chapter uses the Fátima thesis and the Cargo Cult to show how world views, as distinguished from theories, can be formed, how they can evolve, and how they can be critiqued.

A world view can be used to judge how pragmatic assessments and analytics *complement* each other, at least until discrepancies require a revised world view. In the case of the Fátima thesis I show that the implied message is of doubtful truth-value in the contemporary world view, that it might have had considerable truth-value within a medieval world view, and that if certain types of events were to occur, its truth-value could become plausible.

The original accounts of two chapters in this book – one of which is on the nature of physical reality and the other on legal theory – originally were placed in a magazine I edited (*The World and I*). This is generally frowned upon. I offer no apology.

The essay on physical theory was vetted by Marcelo Alonso who later did one of the major papers for the United Nations Conference on '100 Years of Quantum Theory'. Marcelo told me that he had discussed the major issues of quantum theory in long conversations with Niels

Bohr when Bohr had been his house guest. He told me that my paper presented Bohr's position accurately and that he agreed with my criticism of the literature on the Copenhagen doctrine. I also gave a copy to Helmut Fritzsche, a professor of physics at the University of Chicago. He said he agreed with me and told me about the lecture by the noted physicist, Irving Langmuir, one part of which is quoted at the end of the first chapter.

I am not a student of constitutional law but I did read up on jurisprudence. Morris Cohen, on whom I wrote my dissertation, was famous for his articles on jurisprudence. I wrote a well-known book on international law with a former attorney general of the United States as my co-author. I was chosen to do a short biographical sketch on Philip Jessup for the *Yale Biographical Dictionary of American Law*. The magazine I edited, and in which these two chapters appeared, won a Silver Gavel Award from The American Bar Association for a series of articles on law that I supervised. Although none of the above proves I am right, I believe I was qualified to do the article on jurisprudence, which disagrees vigorously with each of the opposed positions of Professor Tribe and of my admired former colleague, Justice Scalia.

I am deeply grateful to Patrick A. Heelan, the William A. Gaston Professor of Philosophy at Georgetown University, for writing a foreword for this book. He is a distinguished, and brilliant, philosopher who is an internationally-recognized authority on hermeneutics. The hermeneutic approach to philosophy is viewed by most philosophers as being inconsistent with analytical philosophy, which is a focus for my use of systems theory. In addition to his doctorate in philosophy Heelan has a doctorate in physics. He did post-doctoral work in theoretical physics with Schrödinger in Dublin and with my friend Gene Wigner at Princeton. That he has not taken exception to my skeptical comments in Chapter 5 on Schrödinger's quantum cat thought experiment encourages me.

I am grateful to Inanna. If this brilliant young scholar had not taken the trouble to convince me that at least one person in the field of International Relations understands my use of systems theory, I would not have produced this book. I would have assumed that any new statement of my position either would be ignored or, like my use of systems theory, force-fitted into positions I clearly rejected.

Inanna's challenges to me were crucial as I developed and retrofitted previous positions. I rewrote a few earlier articles and massively rewrote a few selected portions of a book, *On Historical and Political Knowing,* that was published by the University of Chicago Press. Inanna's introduction

adds greatly to the understanding of my philosophical position and is, in my opinion, a major original article in its own right. I also wish to thank Dr. Ranjan Chaudhuri for his very helpful clarifications of some passages in the text.

There is a reason for the personal style I adopt in this book. A life of philosophy is a life of continuing discovery. I believe that the present account of how I arrived at a post-postmodern paradigm will help others to understand it better than would an *ex cathedra* presentation.

I am also aware that portions of this book are repetitive. I have a good reason for this. Until Inanna proved to me that she did understand what I mean by systems theory, I had undergone an onslaught of critics who were convinced, and who convinced most members of the international theory subfield, that I understand systems theory as general and deductive. I eventually gave up trying to respond to critics whose versions of my position repeatedly astounded me while they ignored articles and books in which my positions were developed. My repetitions are intended to increase the likelihood that readers will accurately remember my earlier positions as I move on to other topics.

Introduction

The Unknown Kaplan: Synoptic Knowledge after Postmodernism[1]

Inanna Hamati-Ataya

When Morton Kaplan published *System and Process in International Politics* in 1957, the field of International Relations (IR) acknowledged it immediately as a groundbreaking contribution to the theorization of world politics. Kaplan proposed a systems approach to international processes that would enable IR to break with its loosely defined political-philosophical tradition and establish a solid, empirical basis for studying a particularly complex realm of reality. This work is still referenced today in IR textbooks, and almost half a century after its first publication the European Consortium for Political Research reprinted it as one of the first three volumes in its Classics series (Kaplan 2005[1957]).

However, what most, if not all, commentators on Kaplan's use of systems theory have failed to appreciate since the 1950s – and what the IR community still ignores today – is the underlying philosophy of knowledge and cognitive project that Kaplan had set out to develop on his own terms, independently of narrow and changeable disciplinary debates. And because of the modern academic compartmentalization of the different fields of knowledge, which prohibits a genuine engagement with interrelated problems in science, social science, and philosophy, Kaplan's cross-disciplinary contributions have remained largely invisible beyond the artificially delineated academic territories separating these interconnected fields of inquiry and their respective audiences.

This book offers Kaplan's synthesis on core issues of philosophy, theory, politics, and ethics, within a *synoptic* approach that reconstitutes the links contemporary academia has artificially erased, thereby providing us with a unified frame of reference for thinking about reality and our situated, historical knowledge of it. The philosophical approach Kaplan

offers here specifically aims to transcend the divide between analytical and hermeneutic philosophies, and hence to bridge the gap between two philosophical traditions that, he argues, are equally valuable and necessarily complementary. In order to locate this book within Kaplan's six-decade-long reflections on a range of interconnected philosophical and practical issues of philosophy, science, and ethics, this introductory essay presents my interpretation of Kaplan's synoptic approach in a way that will hopefully highlight its importance and value to a wide audience among contemporary scholars and students of the social sciences and humanities.

Seven problems for a synoptic approach

To situate Kaplan's project within the relevant literature and delineate its synoptic dimension, I will start with a series of interdependent cognitive and praxical problems that define the contours and highlight the challenges of synoptic approaches to reality and knowledge.

Knowledge: foundations and processes

The question *How is knowledge possible?* is the starting point of epistemic inquiry. As Nietzsche argued, we tend to answer such questions by relying on dichotomous perspectives that we believe characterize the existential world as much as the logical/perceptual categories of our understanding. One of the main perspectives used to make sense of the origins, sources, and bases of our knowledge is that which distinguishes pure reason or *intuitus* from experience and the senses. The Kantian notion of *a priori* knowledge, defined as not knowledge that 'is independent of this or that kind of experience', but knowledge that 'is absolutely so of *all* experience' (Kant 2008), has constituted an important metaphysical principle that united various traditions from Greek philosophy to the European Enlightenment, and has provided an invaluable sense of certainty and security to the Western epistemic tradition. Even the development of the sciences in the 17th and 18th centuries and the underlying Baconian, Galilean, or Lockean philosophies that supported them did not manage to break the idea of the human mind's ability to produce 'justified true beliefs' independently of the subjective, material, and limited framework of our sensory apparatus.

The following centuries, however, produced a rich literature that critiqued cognitive views based on absolute identifications. Conventionalism, pragmatism, social constructionism, and the sociology of knowledge have shown how both endogenous and exogenous factors

contribute to (shaping) our understanding of reality. Kant himself may be viewed as having initiated a mild form of 'interpretationism' with his assertion that 'the order and regularity in the appearance, which we entitle *nature*, we ourselves introduce'. Nietzsche took this view to its extreme, setting knowledge and all beliefs associated with its existence, validity, and purpose as the sophisticated yet primal expressions of a basic human impulse – the 'will to power' (Nietzsche 1998). Between these two views, different forms of 'empirical interpretationism'[2] have flourished, which all seem to have directly grown out of Hegelian philosophy. Hegel himself did retain the notion of an *absolute*, total knowledge as the expression of the ultimate actualization of the Spirit's consciousness of itself and the world. But his acknowledgment of the reification of actual *historical* concepts led to the development of various philosophies that grounded human understanding in the particularities of the circumstances of human life. Marx's and Mannheim's respective conceptions of 'ideology' opened the door to sociological modes of explanation of the nature and content of knowledge, reaching beyond the influence of endogenous, mental structures, to that of exogenous, socio-economic structures of material existence.

Modern philosophers, on the other hand, had to incorporate the epistemic developments that had revolutionized the pure sciences, especially those undermining belief in self-evident truths, including mathematical ones. The evolution of physical theory – non-Euclidean geometry, the theory of relativity, quantum physics – showed that conceptual and empirical changes could affect the most fundamental axioms and givens of earlier systems of thought and theories. These developments constitute the basis of many post-positivist philosophies, which focus on the conventional aspect of knowledge or on the more specifically social and historical character of its constitution and content.

In the final analysis, the question – *how is knowledge possible?* – remains. It is difficult to envisage a philosophy that can take into account all the different constitutive elements of human knowledge – and the more restricted forms of epistemologies that are concerned with what makes knowledge 'valid' and beliefs 'true' or 'justified' cannot relieve us from the sense of insecurity and doubt that results from the empirically supported acknowledgement of the historicity of knowing.

Historical knowing: views from somewhere

As long as the possibility of univocal, absolute identifications is a given, cognitive debates are restricted to the more technical, analytical, and formal problems of the philosophy of science. The shattering of the

traditional notion of objectivity and of the absoluteness of knowing opens these debates to existential problems that lead to a revaluation of the most deeply constitutive elements of our collective consciousness.

A transition from a paradigm of absolute knowledge to one of historical knowledge occurs in Hegel's *Logic* (1969). Hegel attempted to reconcile the two by resorting to a dialectic that preserved the linear temporality of the human cognitive progress, thereby providing hope that the incompleteness and relativity of historical knowing would not preclude the possibility of true identity in the Absolute.

Marx famously asserted that he stood Hegel on his feet, whereby he meant that he reversed the causal relation between historical consciousness and historical progress that Hegel had posited by grounding the structures of historical thought in the material structures of human existence. However, the problematic relationship between the historical and the absolute remained, now transposed into the dichotomy between 'false/distorted consciousness' or 'ideology', which Marx restricted to the owning class alone, and 'true consciousness', of which historical materialism itself was the first manifestation (Marx and Engels 1998, 2008). But the grounding of true knowledge in empirical reality could only be asserted with the introduction of a metaphysical element (Hegel) or a dual historical process (Marx), neither of which could be proved empirically or deduced logically from either idealist or materialist premises.

Sociological explanations of knowledge are thus confronted with the question of the validity of knowledge. Mannheim (1936) acknowledged that the sociology of knowledge is primarily concerned with the conditions of the (social) determination of knowledge rather than those of its (epistemic) validity. The purpose of *Wissenssoziologie*, then, was to relate the content of specific modes of thinking to the characteristics of the social milieus in which they appeared and made sense, much as Dewey's pragmatism later found a connection between Greek philosophy and the social structures of Greek society (Lavine 1950).

Contemporary science studies also show that social factors influence the emergence and propagation of scientific concepts, theories, and methodologies, and that some of the most widely acknowledged 'scientific revolutions' were more directly made possible by social rather than intellectual developments. This famously led Feyerabend (1982) to promote 'anarchy' as a realistic alternative for the process of scientific discovery, whereby magic, speculation, and religion would be granted as much credence as the most highly regarded scientific hypotheses. Historical knowing, therefore, breaks the notion of a single world that humans are universally and fittingly equipped to grasp independently

of their social loci – loci that are neither ideologically, nor intellectually neutral. Consequently, in addition to the revaluation of the classical distinction between knowledge and opinion, the historicity of knowledge makes the question of cognitive progress a problematic one.

Progress: transcending the relative

As long as the univocality and absoluteness of identifications are asserted, progress in knowledge likely will be viewed as a linear process that rests on our ability to transcend merely technical and methodological problems. Scientific growth would then follow a form of evolutionary progress, whereby concepts, theories and paradigms compete, and those that are most 'fit' to explain reality are selected on the basis of common frames of reference that set the standards for the formulation of hypotheses, the conduct of experiments, and the anticipation of predictable results. But evolutionary epistemologies ascribe to scientific growth a certain 'blindness' that mirrors the processes whereby genetic selection occurs in nature (Thagard 1980), thereby failing to see that cognitive process is governed by specific, practical *purposes* that are absent from biological selection.

On the other hand, historical explanations of the growth of knowledge tend to be excessively deterministic and teleological, ascribing to the historical process a finality that is governed by the actualization of human self-consciousness. Along with Hegel, who believed that each particular historical stage of knowing resulted dialectically from a previous, less developed one, Comte (1880) adhered to a linear temporality whereby the very establishment of intellectual disciplines reflected the development of the human mind itself, gradually moving away from 'theological' and 'metaphysical' modes of explanation to 'positive' ones, of which sociology was the final culmination. The influence on Marx of both Hegel's dialectic and Comte's positivism resulted in his adherence to a dual temporality wherein 'false/distorted consciousness' evolved with the evolution of the means of production, while 'true consciousness' emerged from the inherent contradictions between the ideology of the ruling class and the material conditions and aspirations of the oppressed one.

This existential need to identify the 'laws' that govern the development of our understanding of the world is obviously related to a general aspiration for progress and a belief in a meaningful, ordered future wherein humans are not merely under the illusion that they are moving away from past ignorance, but confident that they are capable of solving current and future problems exponentially as their knowledge grows.

Linear-progressive views of knowledge, in addition to their adherence to the classical conception of objectivity, thus convey an undeniably teleological view of existence, already implied in the very notion of scientific *growth*.

Without assuming *progress*, contemporary science studies explore logical, psychological, or sociological explanations of scientific or cognitive *change*, where 'new scientific knowledge derives logically from previous knowledge…, from the mental structures and procedures of scientists' or from their 'organization and social interests' (Thagard 1994). Doubtless, all of these factors need to be taken into consideration in order to grasp the *big picture*. This, however, would require that we look into the ways wherein the structures and processes of the mind, the individual and collective structures of the human psyche, and the structures and processes of socialization, are intertwined. The least one can say is that the big picture can no longer be arrived at by using monocausal, reductionist explanations, or by following the contemporary academic division of labor. Interdisciplinary knowledge has therefore become a necessary prerequisite for the understanding of both the synchronic and diachronic aspects of knowing.

Theory: making sense of the existential

While epistemic questions constitute an essential aspect of any cognitive inquiry, most scientists in the physical and social sciences are not interested in unmasking the logical, mental, or social factors that explain why they do what they do – they wish to just get on with research, with the hope of *explaining* (predicting) reality.

While some believe that explanation entails an understanding of the essence of things (Plato, Descartes, Duhem), explanation in the scientific era is mainly concerned with determining how singular occurrences fall within general patterns of behavior, or *laws*. Hempel and Oppenheim (1948) proposed a *deductive–nomological* (DN) account of explanation, where a singular event – the *explanandum* – is logically related to a set of propositions – the *explanans* – which include at least one statement of a scientific law, as well as the boundary conditions under which the law applies: the event to be explained thus follows deductively in an *if–then* argument, in the form of a (retrospective) prediction wherein the *explanandum* is shown to necessarily have happened. This type of explanation, also known as the *covering law model* (the law covers the pattern of which the *explanandum* is a singular occurrence), has constituted the principal theory of explanation used to describe what both physical and social theories do when they claim 'why' a particular event occurs.

But the DN account was criticized for separating the logic of prediction from that of causation: as shown by Scriven (1959b), it may explain why, in the Darwinian model, certain genetic traits evolve, by causally relating them to the benefits they confer to those who hold them, but it cannot predict that particular traits will be selected. *Causal* approaches to explanation thus aim to establish a symmetrical relation between the logic of explanation and that of prediction.

Causal explanatory knowledge also requires a determination of the level of explanation aimed at: to explain why a tree fell during a storm, some variables are sufficient to account for the occurrence of the event, while additional ones are necessary to explain why the tree fell exactly the way it did. The use of counterfactual analysis enables us to distinguish the causes that are relevant at a specific level from those that are relevant at other levels of explanation. The selection of competing theories is then made on the basis of their *explanatory power* – their ability to subsume the largest number of phenomena under the simplest system of relevant causal relations – as well as their *predictive power* – which implies that they can sustain the test of falsification.

In the social sciences, things are complicated by the nature of the subject-matter: the number of possible relevant variables, the levels of analysis, and the elements of human will and freedom preclude a strict use of the covering-law model. Since the subject and object of inquiry share the same nature, the definition of scientific problems, the formulation of hypotheses, and the observation/measurement of events entail a great deal of circularity that is made more problematic by the linguistic medium of scientific communication.

The 'Behavorial Revolution' in American social sciences and the passionate debates it led to testify to the difficulty of reaching a consensual, operational view of explanation that would satisfy the requirements of scientific investigation *and* take into account the specific nature of human behavior. In this respect, explanation is often said to fall short of its expected objectives, and is therefore often 'downgraded' to *understanding* or *interpretation*: implied in these alternatives is social science's permeability to, and/or dependence on, *judgment* and *valuation*, which are often viewed as constituting a fundamental obstacle to the production of objective knowledge as defined in the physical sciences.

Values: between knowledge and judgment

As soon as we ask whether values and judgment are included in or constitutive of theory, the 'problem of values' (Hamati-Ataya 2011) and the fact–value dichotomy emerge. Epistemically, statements of fact are

said to be different from statements of value or 'value-judgments' since they 'define what is', while value-judgments 'do not have for object the nature of things' but 'their worth in relation to persons' (Durkheim 1953, p. 80). Implied in this opposition is that there can be no objective or intersubjective consensus on the validity of values: people can agree over the *occurrence* of a phenomenon, but not its *meaning* or *worth*, which depends on and remains restricted to the valuating subject.

This dichotomy, then, implies that within an objectivist conception of objective knowledge science can produce meaningful propositions about facts alone: it can therefore not determine what is (more/most) valuable but rather only who values what, or what values explain what behavior. Since 'to judge the validity of…values is a matter of faith' that 'involves will and conscience, not empirical knowledge' (Weber 1949b, pp. 55, 54), Scientific Value Relativism (Brecht 1959) establishes a distinction between *empirical* and *normative* theory.

Against this position, value-cognitivism aims to empirically establish the possibility of 'universal value-judgments' or show that value-judgments are grounded in human nature as revealed by needs/desires. Although a move away from philosophical/normative explanations requires an understanding of anthropological and psychological processes, social studies actually supply 'evidence' that supports both positions, showing that there exists both a 'great variety' and 'a great deal of agreement' over value-judgments (Nelson 1978); and no hard evidence has yet impressed social scientists to the point of appeasing their need for empirical certainty.

The implicit assumption underlying this debate equates *objectivity* with *universality*, since it posits that if science could prove that universal value-judgments exist, it would justifiably conclude that values themselves are universally true. The non-cognitivist view is therefore epistemically inconsistent, since it assumes with regards to 'values' something that is never similarly assumed for 'facts' – that fluctuations in their singular manifestations make them unknowable. This dual standard often leads value-cognitivists to reverse the criticism by extending cognitive skepticism to facts themselves, thereby offering subjectivist, perspectivist, or nihilistic conceptions that shatter the status of science as a distinct, legitimate, and/or superior type of knowledge. The paradox is that what non-cognitivists typically refuse to grant values in general – objective foundations – they do grant to exclusively one – truth – while in their attempts to establish objective foundations for values, value-cognitivists have to either deny truth such foundations, or accept a consistent relativism that defeats their purpose.

The problem is therefore intimately related to scientific objectivity. Nowadays, most social scientists agree that values should not pollute (the study of) facts: 'value-freedom', which requires that the scholar 'keep unconditionally separate the establishment of empirical facts ... and *his* own practical evaluations' of them (Weber 1949a, p. 11), is meant to protect science from bias and ideology. Most techniques offered to achieve this 'detachment', since Durkheim's command to 'treat social phenomena as things' (Durkheim 1966), are rooted in positivism. Weber's *Verstehende* sociology also sought to identify the 'meaning' actions have *for social agents* by reconnecting them to their intended effects *independently* of the observer's assessment of their rationality and worth. The mainstream view, then, considers that values are problematic only insofar as they introduce *bias* in practical research, regardless of whether/how they influence cognitive interests (Nagel 1961; Kaplan 1964): the problem becomes one of 'value-control'. In other words, although values can, by definition, not be *known* directly, they can nevertheless be 'filtered', since they pollute what *can* be known – facts.

Falsificationism offers standards for such an endeavor, by relating the factual basis of scientific propositions to the rules of experimental testing (Popper 1959). However, as Kaplan has noted, what counts as a falsification depends upon the rest of the existing body of knowledge. Moreover, this belief in the 'neutrality of techniques' was criticized as the 'illusion that "axiologically neutral" operations are also "epistemologically neutral"' (Bourdieu et al. 1968), thereby further challenging the assumption that a materialist approach to hard 'facts' could prevent the 'pollution' of science by valuations and judgment.

The critique of positivism's obsessive attachment to facts as *givens* is also supported by science studies, which demonstrate that rationalism was often an obstacle to the development of science, and that knowledge is partly socially determined and can therefore not merely be subsumed by the logic of objective inference and reasoning. Beyond mere individual values, it is the whole 'ideological apparatuses' (Althusser 1984) and 'regimes of truth' (Foucault 1997) that give meaning and purpose to the social system in which science operates and from which it speaks that have taken center-stage. Accordingly, one wonders to what extent science can still claim legitimacy against ideology.

Action: feeding back reality

It is said that one of the purposes of science is *control*, by which is meant control of that reality which we strive to *explain* and *predict*. Control, however, falls in the realm of action or praxis and is therefore governed

by judgment and freedom. While theories that follow the covering-law model might allow for an accurate prediction of expected results, most of what is investigated in the social sciences and humanities needs to involve human judgment more intensely and more problematically than the most difficult problems of physical science. The logic of social action thus blurs the comfortable epistemic line between knowledge and judgment.

As Weber would put it, science is an activity that is rationally guided by both purpose (interest) and value (truth), and therefore follows two different types of normativity. The question of knowledge-based social action thus feeds on the fact–value/is–ought dichotomies and the view that descriptive and normative discourses are not only different from each other (Hume 1978 [1739]) but that what ought to be can also not be deduced from what is (Hare 1963). This opposition was crucial for classical sociologists in defining the nature and role of science as opposed to philosophy and ideology. This was as true for the positivists (Comte, Marx, Durkheim) as it was for Weber, who viewed sociology as concerned with the 'analysis of facts' and incapable of providing guidance for the establishment of socio-political norms required to guide social action. The acknowledgment of science's inability to determine judgment therefore supports the view that knowledge of values (as norms) cannot be grounded in knowledge of (values as) facts. It follows that science cannot justify normative statements *if* these imply *axiological preferences*. This also leads to a deontological distinction that segregates the ethos of 'scientific man' from that of 'political man' (Weber 2004).

From this perspective, the only obligation that results from scientific knowledge is *rational*, not *axiological*. By revealing the causalities that underlie social phenomena, science delimits the realm of rational action in a *hypothetical*, not *categorical,* manner: 'it cannot tell anyone what he *should* do – but rather what he *can* do' (Weber 1949b, p. 54), without, however, guaranteeing that he *will*. The normative dimension of science is thereby reduced to a practical means–end relation, for it cannot express preferences among different ends, nor assume any *telos* grounded in a natural order of things. Social action, therefore, remains based on exogenous principles involving human judgments that cannot be supported objectively or intersubjectively and thus fall within the realm of ideological conflict.

However, since Marx's statement that the purpose of philosophy is to change reality and not merely describe it, social scientists have grown more aware of the moral responsibility of science. A great part of this ethos is associated with 'critical' sociology as a paradigm of engaged/

activist scholarship that adheres to and reinforces the view that science itself is neither ideologically neutral, nor inherently different from other competing discourses that claim a monopoly on social truths. In addition to Marxist narratives, pragmatism and constructivism have complicated things by arguing that representations of reality are constructed by perceptions *and* goal-oriented action. This extends the relationship between theory and practice beyond the mere problem of the self-fulfilling *Oedipus effect* of theory (Popper 1957). If it is indeed correct that reality is changed as we interact with it and that we understand it only insofar as we do, then the rules governing what *is* become more problematically intertwined with those governing what *ought to be*: purpose, interest, and judgment are hence more intrinsically part of understanding than classical views on knowledge claim, which requires a *reflexive* inquiry into the *reflectivity* of knowledge.

Reflexivity: looking back at the knowing self

The golden age of positivism – and its reassuring beliefs in objectivity, the universality of being and understanding, and progress – is now over. The most extreme alternatives to the positivist dream/nightmare have pushed us to the edge of nihilism and its offspring – from the philosophy of the absurd to existentialism and fanaticism. Relativity has taken over, providing easy justifications for errors of judgment, inconsistency in actions, and the devaluation of human responsibility.

Since it seems impossible for us to go back to the golden age of certainty our ancestors enjoyed without falling into a pathological condition of cognitive and moral denial, the *reflectivity* of knowledge needs to be addressed, not evaded. Just as a mirror reflects light, our knowledge of existential reality is reflective of a multitude of individual and collective, ideational and material, mental and historical structures and processes. Epistemically, the situation is similar to our knowledge of particles: as soon as we attempt to study them with the available techniques, we interfere in their states of being so that our resulting knowledge is as reflective of our interactions with them as it is of their presumed independent existence. Instead of addressing this problem, contemporary philosophy evades it by dividing cognitive labor between objectivist and critical theory, thereby consecrating the idea that the *validity* of knowledge and its *determination* cannot be simultaneously addressed within the same epistemic frame of reference. The problem, then, is that different orders of discourse are necessary to account for the different dimensions of both reality and our knowledge of it.

The paradigm of objectivity and universality was existentially comfortable. Yet it also led to the de-sacralization of human responsibility, mainly because the 'good' and the 'just' were *de facto* encompassed – and hence, annihilated – by the universally, absolutely 'true'. If contemporary post-positivist philosophies are to lead us to a more realistic but also better world, they have to give us hope that the deconstruction and unmasking of these illusory categories and structures of our understanding can lead to a responsible, pragmatic, and realistic cognitive ethos. An alternative view to the intellectual and academic division of labor that characterizes contemporary science is one that calls for the *reflexivity* of thought as a response to the *reflectivity* of knowledge and reality. *Cognitive reflexivity* entails the establishment of an epistemic frame of reference wherein social determination and epistemic validity can be addressed as equally significant and mutually informative inquiries; *moral reflexivity* entails that our understanding of the ways wherein our knowledge is produced feeds back into our dynamically evolving judgments of the good, the just, and the valuable – that is, into our purposeful, consequence-bearing actions – including knowledge as such.

A synoptic view of knowledge, then, (re)establishes the pragmatic relationship between thought, judgment and action; subject and object; science, history, and ethics. It invites us to reconsider the unity of academic disciplines not merely on the basis of an alleged unity of knowledge, but on the basis of the common world we inhabit and the common, yet differentiated, condition we share. Few philosophers have attempted such a synoptic view since Aristotle, and it has not previously been fully articulated in any single published work by Morton Kaplan, although many elements of just such a view can be found scattered throughout his writings. The essays presented in this book unify and unravel the truly and consistently synoptic thought-frame that Kaplan spent a lifetime developing, and of which I will now attempt to offer a synthesis.[3]

Kaplan's Synoptic Project

The second half of the nineteenth century and the first half of the 20th witnessed radical philosophical developments. Whereas cognitive change in the previous eras since the Scientific Revolution had mainly come about through empirical discoveries, the developments that were to shake some of the most fundamental axioms of previous knowledge were based on both experimental and conceptual revolutions that altered significantly the main premises and givens of existing

paradigms. It is therefore not surprising that young Kaplan would start his academic journey in the late 1940s with a dual process of synthesis and revaluation of the premises of common and scientific knowledge. What is unusual, however, is that this synthesis should lead him early on not only to draw the consequences of the main epistemic points of contention that were dramatically revealed by different extant philosophical movements, but also to establish a view of knowledge that was informed by the development of historical knowing *and* that provided the bases for explaining it.

Knowledge as process: the pragmatist view

Kaplan's intellectual journey starts with a re-commitment to knowing as a meaningful human activity. At a time when objectivism was being subjected to the attacks of a relativism that had shattered the points of reference for the initiation and sustenance of cognitive discourse, Kaplan sought to formulate a view of knowledge that could avoid the faults of positivism and absolutism, without surrendering to the nihilist or perspectivist conclusions of relativism. The point, then, was first to address without ambiguity the problem of the foundations of knowledge. While postmodernism had just begun identifying the mistakes of earlier objectivist approaches, Kaplan was already exploring what he viewed as the mistakes of postmodernism, thereby setting the basis for a 'post-postmodern' philosophy of knowledge (Kaplan 1998a, 2001) that aimed to transcend the dichotomy between the absolute and the historical.

The central unifying principle that underlies Kaplan's synoptic view is that an understanding of the foundations, production, meaning, and utility of human behavior should take into account the characteristics and existential conditions of the subject. On this view, the answer to the original epistemic question *How is knowledge possible?* cannot be founded on metaphysical premises, and should rather start from an empirical understanding of how mind learns about the world – including the self – and of how will and desire relate to this understanding. This principle constitutes the starting point of Kaplan's anti-positivist *and* anti-relativist position. It requires that one move *from the empirical sciences to metaphysics*, not the other way around. It is therefore in the most practical branches of knowledge that Kaplan found the premises and frames of reference that would serve as the epistemic foundation for his philosophical, conceptual, and theoretical inquiry.

The first of Kaplan's premises is that the classical notion of *objective truth* as identical with reality does not take into account either how mind acquires knowledge by coding incoming information, or how the

procedures and processes of scientific investigation validate the information thereby acquired. This serves as the basis for a criticism of both empiricist and rationalist accounts of absolute truth.

Pragmatism first considers that a given object *x* does not exist *qua x* in nature, waiting to be identified by a thinking subject; it exists – for *us* – only insofar as it can gain a set of potential meanings, which can be ascribed only on the basis of a pre-conscious state of being, a theory, a purpose, and an experiential situation. It is, then, our use of language and the processes of reification that accompany it that create the illusion that the realm and nature of the known (and even of the unknown) is accounted for by an *identity* among the corpus of theories, concepts, signs, and words that we use to describe it.

The process of interpretation is, rather, embedded in a pre-existing cognitive structure that is constituted by our neurophysiological apparatus, and the mental, collective structures of our understanding as they exist at a particular time in history. A given 'discovery' should then be treated as a particular *input* that gains its significance, not on its own, as a *ding an sich*, but within the general system of representations that made this discovery 'visible' to the mind by giving it a specific meaning, a meaning that is also constructed out of the system of pre-existing knowledge within which it gains its significance as a new item of knowing, *in relation to others*.

This is what makes conscious as well as unconscious knowledge situational and historical: it is in this sense that 'Newton could not have had Einstein's intuitions' (Kaplan 1966), and that some discoveries, such as the Rosetta Stone, could not have been endowed with a meaning – could not truly be *discovered* – by those lacking a pre-existing system of representations and a purpose to recognize it as such, and *a fortiori* before the problem of deciphering its marks could become a *scientific problem*.

The language of the mind, then, of which only the most conscious parts are accessible to us, does not in and of itself tell us anything about existential reality, except that some aspects of it have gained a specific meaning to us as creatures motivated by specific purposes and whose minds are prepared to 'see' – receive and interpret – certain referents *qua* referents. And although it is almost certain that the pre-conscious mind participates in the initiation or correction of identifications, its language remains unknown, which prevents us from assessing the validity of its inferences if it does indeed allow us to perceive some aspects of reality independently of any experience.

The self, on this view, constitutes an object of knowing just as any other, which precludes the establishment of knowledge on solipsist

foundations (Kaplan 1969). The mind, then, is neither a blank slate waiting to be impressed upon by external reality (Locke's *tabula rasa*), nor a container of self-evident truths (Descartes' *cogito*): it starts, rather, *somewhere in the middle*, between a pre-conscious language to which we currently have no access, and an empirical, self-corrective engagement with a reality that we see – and name – differently and dynamically as we interact with it, and as our purposes and pre-existing conceptual schemes change and correct themselves.

Secondly, the *process* of cognitive investigation itself does not occur in a vacuum, as there is no direct means of 'seeing' reality. Knowing is a *situational* process that is dependent on the nature of the instruments as well as on the framework of perception and interpretation employed. The elements of any cognitive *situation* – the subject (the perceiver), the instruments used, the perceived, and the environment – all need to be taken into account when describing or defining what one 'knows', because it is in the interaction among them that knowledge becomes possible, that is, that items of reality become objects of knowledge and objects of thought, either in the form of a cognitive *problem* to be addressed, or as a tentative *referent* to be singled out and interpreted in relation to others.

In this process, the synchronic aspects of knowing have important limitations (Kaplan 1971). The first limitations are imposed by the instruments of scientific investigation, which in the best cases are scientific instruments, constructed *on the basis of* a theory and *for* a purpose, which makes them inappropriate for, or incapable of, perceiving referents that fall outside of their frames of reference. A second type set of limitations are those imposed by the mental and physiological states of the subject, including intuitions, which are as self-corrective, and therefore as dynamic, as the analytical mind. More importantly, cognition is characterized by the epistemic limitation that is created by the cognitive frame of reference that sets the corpus of meanings assigned to each particular stage of investigation, from the definition of scientific problems and the conceptualization of reality to experimentation and the interpretation of its results.[4]

The outcome of any given cognitive experience is therefore meaningful only *within* the specified material and epistemic *conditions* that made it possible. And although these conditions are usually only implied in our final formulations, they can be neither discarded nor set as absolute standards: they are the only foundations that enable cognitive discourse and knowledge as we realistically produce it to gain objective meaning as opposed to *intuitions*, *common sense*, or *intersubjective agreement*. As

a result of the very nature of the foundations and processes of scientific investigation, it is not in some absolute frame of reference that we embed our experience of reality, but in a multitude of singular frames of reference which give specific, particular and discrete meanings to that reality and to the statements we make about it. Ultimately, since the methods of science cannot be used to prove themselves, the notion of *absolute truth* cannot be sustained meaningfully.

This leads us to the problems posed by relativism. Replacing *the absolute* with *the relative* implies that knowledge has no foundations outside of the subject, whether viewed as an individual or collective being. In the best cases, then, relativism proposes subjective or intersubjective knowledge as a substitute for absolute knowledge, thereby replacing the *object* with the *subject* as an epistemic point of reference, and implying that knowledge as we know it is somehow knowledge of the historical self rather than knowledge of independent reality. In Kaplan's view, this critique of objective knowledge has two main flaws. Firstly, its criticism of objectivity refers to the same *objectivist* understanding of objectivity; secondly, and consequently, despite its accurate criticism of absolute truth it draws the wrong conclusions with respect to the nature of truth. Kaplan suggests that the critique of the classical theory of objectivity should rather lead to a redefinition of truth that is faithful to the nature of knowledge as a pragmatic, transactional, and self-corrective process (Kaplan 2006).

The best way to illustrate how Kaplan's pragmatism diverges from postmodern analyses of objective knowledge is by referring to the source of the problem as illuminated by the special theory of relativity, which, along with quantum physics, has had a tremendous impact on the philosophy of knowledge. The theory suggests that different observers will perceive reality differently depending on their frames of reference – the inertial systems on which they are each located. Because Einstein was able to predict that measurements of time would be different on different inertial systems, and because time had constituted one of the most fundamental 'constants' of classical theory, the shattering of the absoluteness of time led to the shattering of the very notion of objective reality.

To address this epistemic problem, Kaplan develops his pragmatism beyond Peirce's initial conclusions. Like all pragmatists, Peirce rejected the notion of absolute knowledge, asserting that knowledge is governed by empirical, not *a priori* rules: the same *pragmatisch* nature that Kant considered to be exclusive to the rules of art and technical knowledge was now viewed as governing the realm of all rational cognition, which

has an 'inseparable connection' with 'rational purpose' (Peirce 1905). On this view, the classical notion of absolute truth could no longer account for the pragmatic nature of knowledge as defined by the relationship between reality and the meaning that specific human purposes endow it with. This led Peirce to replace the notion of 'truth' with that of 'meaning', thereby moving further away from any form of essentialism: to know something is to grant it a meaning, and the meaning of something is revealed by the different experiments that it can be subjected to. This conceptual shift from 'truth' to 'meaning' signifies pragmatism's rejection of objectivism both negatively – known reality *is not* qualitatively equivalent to reality as it exists independently of the subject – and positively – knowledge of reality *is* dependent on an interpretation driven by specific purposes (Lavine 1950).

A pragmatist himself, Kaplan adheres to both these positions. His problem, however, is that Peirce's rejection of the notion of truth was similar to that of the relativists: what was being rejected was the notion of *absolute truth*, whereas Kaplan's purpose was to formulate a pragmatist concept of truth that would be in accordance with both the independent existence of reality *and* the meaningfulness of valid, albeit different, accounts of it (Kaplan 1994). What Kaplan added to this view is simple yet fundamental: instead of giving up on the notion of truth altogether, he simply applied to it Peirce's pragmatist definition. Truth is approached through the purposeful meaning it gains in specific experiential settings. The meaning of truth is then revealed pragmatically, not independently of experience and purpose. Pragmatist truth bears the same weight epistemic limitations impose on other elements of knowing, but retains its significance as a cognitive and moral concept/value, as something that is worth investigating because it is endowed, not with just *any* possible meaning, but with a multitude of meanings (and, at any point in time, a *finite* set of meanings) that are understandable, related to specific purposes, are themselves useful and not random, absolutely relative, or simply subjective.

From this perspective, Kaplan agrees that the theory of relativity constitutes an important mental and conceptual revolution that shatters the axioms of objectivism. He, however, does not fully subscribe to the relativist conclusion. The key to understanding the reality that is illuminated by the theory of relativity lies in an understanding of the meaning of Einsteinian physics/reality in relation to Newtonian physics/reality. In other words, the point is to reassess the notion of truth as redefined by pragmatism by providing an explanation for two distinct, but epistemically related problems: the simultaneous validity

of *Einsteinian and Newtonian* accounts of reality, and the simultaneous validity of the accounts of Einstein's *two observers*. Beyond the mere objective of redefining truth in such a way that knowledge and science are reinstituted as meaningful human activities, Kaplan's purpose is to reassert that despite the loss of our absolute references, we can inhabit 'a common world' (Kaplan 2006).

Truth beyond relativity: objectivity and second-order agreement

Let us start with the first problem. Despite the fact that Einsteinian physics is quite different from Newtonian physics in its premises, definitions, and conclusions, it has not fully replaced it, at least as a mode of scientific prediction; indeed, contemporary physicists still use Newton's equations despite their acceptance of the 'validity' of relativity theory. If we look at the frames of reference proposed by both theories, and more importantly at their metaphysical conclusions pertaining to the nature of space and time, it is difficult to resist the impression that some major contradictions are at play, leading us to the need to choose between one or the other perception of reality. The point is to determine what these seeming 'contradictions' really mean: do they imply that the two theories and the views of reality that they convey are *incommensurable*? Not according to Kaplan.

For Kaplan, the new meaning that is revealed by the cognitive transition between the two is, rather, that each of them illuminates an aspect of reality by creating different meanings within different epistemic and conceptual frames of reference, on the basis of different cognitive and practical purposes. The *contradiction* between the two theories is mainly illustrated in the fact that what is absolute in one is relative in the other. What Kaplan sees as the important element here is that this contradiction results not from a matter of *fact*, but rather a matter of *frame of reference*, which inevitably translates into its natural vehicle – *language*: despite their unified denomination, the concepts of time, space, and mass have indeed different *meanings* in these theories – they refer to different *things* (Kaplan 1998b). And it is mainly because of our reification of concepts and our treatment of language as univocal that we reach the conclusion that the two *realities* described by these theories are different, and that one or both theories are wrong. Kaplan suggests that within a pragmatist understanding of truth, both theories illuminate some aspects of reality, and that through the warrant of *empirical evidence*, each theory provides part of this truth in such a way that although a primary language cannot create a first-order agreement between the two

views, a secondary language can. This *second-order agreement* entails the capacity to epistemically move back and forth between these two theories so as to explain, within a common frame of reference, the meaning of their 'truths' despite, and beyond, their respective particular languages (Kaplan 1994).

The seeming contradictions between Einstein's two observers constitute a problem similar to that of the contradictions between Einstein's and Newton's theories. The difference is that while the latter were devoid of a common frame of reference capable of producing a second-order agreement between them, in the second situation, Einstein's theory itself provides the common frame of reference for the explanation of the contradiction between the two observers' perceptions of reality. In other words, the theory of relativity provides the second-order agreement that was needed in the previous example to illuminate the *commonality of reality* despite the differentiated singular accounts of it (Kaplan 2006).

The first given of the problem is that Einstein's two observers are positioned in two different inertial systems that are their respective frames of reference for measurements. According to Einstein's hypotheses, each one would, from her specific position, measure that time moves more slowly for – that is, that time lines are longer on – the other. The confirmation of this hypothesis results in what seems to be a contradictory conclusion: that time moves more slowly *for both*. The contradiction, however, is a product of the elliptical character of the conclusion, which leads us to think that there are two distinct, incommensurable truths, since it is not possible according to the standards of objectivism for 'more slowly' to be both true and false. However, the theory of relativity suggests that this is indeed the case, and consequently that both observers are right.

The theory of relativity indeed explains why the two observations appear to be contradictory, by explaining that time measurements differ with the position of the observer. Both observers reach a *true* conclusion. But while it is correct to say that on this view there is *no absolute truth*, Kaplan believes that it is incorrect to conclude that there is *no truth at all*. The theory of relativity suggests, on the contrary, that truth has a different meaning that is only elliptical in the statement 'both observations are true'. Two fundamental propositions are indeed missing from this statement. The first is that each observation is true *from the specific frame of reference within which it is made*; the second is that each observer can understand, explain, and predict that the other observer's observation will be contrary to her own – *and* will accept it. In other words, the pragmatist definition of truth considers two interrelated and

equally necessary *orders of discourse*: the first-order is specific to each frame of reference, while the second is common to both, transcending the specificity of each, and thereby annihilating the epistemic first-order contradiction.

The truthfulness and validity of the matter, therefore, does not reside in any one of these two observations singly, but rather in their relationship. In that sense, while the two observers cannot agree on their observations, they can agree on the *objectivity* of their respective conclusions from their respective frames of reference. This second-order agreement is what provides the key to the pragmatist definition of objectivity, and thus sets the basis for a new form of cognitivism that is oblivious neither to different frames of reference nor to the commonality of existence.

The pragmatist position, then, formulates the problem of objectivity in a different way than does relativism: what is objective about knowledge is not the content of scientific propositions and the referents to which they refer (and *a fortiori* not some natural 'fit' between absolute reality and absolute reason), but the fact that these propositions can be successfully publicly communicated among different observers as long as they are warranted by empirical evidence, and that it is possible to reach a second-order agreement beyond the singular frames of reference of particular observers and theories. Pragmatism, then, not only allows for a (second-order) common discourse on reality despite different frames of reference, but also enjoins us to make explicit the epistemic, historical, and experiential conditions of the specific or general cognitive statements that we produce. What 'frame of reference' means, on this view, is that insofar as knowledge is the result of an interaction among *an instrument of perception, an object, and an environment*, knowledge produced out of different interactive settings will bear the natures of these settings.

With these limitations and processes in mind, empirical evidence remains our only warrant that some meaningful things can still be said about our existence in this world, on the condition that we remain conscious of *both* the premises that make this meaning possible *and* the possibility of second-order agreement that allows us to bridge the seeming contradictions between other observers' experience of reality and our own. As we shall see later, this principle has important consequences for the development of scientific and social theories, including moral analysis, and for the initiation of reflexive thought.

The question of reflexivity will be dealt with later in this essay, but it is important to refer at this point to one of its fundamental components. As suggested earlier, one of the central epistemic and philosophical

problems is the dichotomy between objectivist and critical discourse, which relates to the dichotomous relationship between the specification of the *validity* of knowledge and the specification of its *determination*. This dichotomy can now be reassessed in light of Kaplan's pragmatist view of knowing.

Given that knowledge depends upon frame of reference, how can the determination of knowledge be used to assess its validity, and how can the validity of knowledge be asserted despite differences in frames of reference? Since pragmatism considers that knowledge is possible only because it is determined by specific conditions, these conditions set the meaning of its validity. It is, therefore, in second-order agreements that the validity of knowledge is defined on the basis of our ability to determine that, epistemically and empirically, a given determination of knowledge will produce conditional, but meaningful, truths. This principle allows Kaplan to account for the contentions of critical, constructivist, and constitutive theories in the social sciences. If, for example, medieval scientific knowledge of the world was determined by the mental, material, and normative conditions of medieval times, it is correct to say that such knowledge determined the assessment of its validity. It is also possible to distinguish what, in that validity, was strictly dependent on the conditions of its determination from what remains pragmatically true from the perspective of second-order agreement as warranted by current empirical evidence. In that sense, some medieval knowledge remains 'true' today. When its conditions of validity are made explicit, it converges, in second-order discourse, with knowledge formulated today from within a different set of conditions and from a completely different language of investigation.

Cognitive progress: multistability and regulation

Kaplan's pragmatist philosophy of knowledge entails an account of cognitive change and progress. In order to make it more explicit, it will help to refer more clearly to Kaplan's view of the human system even before presenting his systems theory. In order to follow this central thread, the notion of 'multistability' needs to be presented first.

One of the most important themes in metaphysics, ethics, and political philosophy relates to the nature of the human. Many philosophers approach this theme via the concept of 'human nature', based on the premise that such a nature truly exists, or that the notion constitutes a useful concept for the understanding of human behavior and the human condition. Apart from a few texts in which Kaplan specifically addresses this question, a student of philosophy and political theory

will be surprised by its absence from Kaplan's work, especially from his philosophical premises. Although this may not seem all that surprising to scholars familiar with the Behavioral Revolution and its rejection of introspection and all things related to the 'black box', an understanding of what the absence of a definitional approach to human nature really means in Kaplan's case requires an understanding of his pragmatism.

At the outset, pragmatism rejects essentialism, in both its reductionist and absolutist aspects, and finds 'the meaning of things in an understanding of their transactions with other things' (Kaplan 1992a). An understanding of man can therefore not produce general statements based on axiomatic premises – such as man's egoist/altruist nature – which inevitably produce tautologies, while being at the same time incapable of explaining the diverse range of human behavior. Kaplan's pragmatic view of humans is that their nature consists of their *dispositional tendencies*. These do not exist in general but only with respect to the situations that call them forth.

Given that knowledge starts neither with a *tabula rasa*, nor with self-evident truths, but *in the middle* of an ongoing process that separates the pre-conscious from the unknown through the self-correctively known, pragmatism conveys an undeniably dynamic and evolutionary view of knowledge, albeit not in the sense ascribed by classical evolutionary philosophies that rest on a belief in a natural, necessary cognitive process. Nor does it espouse any particularly teleological view, such as those proposed by historical, dialectical, or positivist accounts. If a metaphor could illustrate it accurately, it would be that of the spiral.

Kaplan's pragmatism rests on the acknowledgment of two equally realistic phenomena: the self-corrective nature of human knowledge, which accounts for cognitive *progress* within the conditions mentioned previously, and the pathological processes that prevent self-correction from occurring – and account for both *stagnation* and *regress*. Let us start with the first case. When a new 'discovery' is made either in the physical and social sciences, or at the individual level of personal knowledge, this discovery is not, as explained above, endowed with an intrinsic value, but gains this value – its *meaning* – from the pre-existing system of representations, the purpose of the perceiver, and the state in which the discovery is made, among others. This new item, viewed as an *input* to the system of perception in its interaction with its environment, might add to the existing corpus of knowledge, thereby confirming its validity. In this case, it can be said to induce a *positive feedback*. On the other hand, the input that contradicts or alters this corpus of knowledge can be said to induce a *negative feedback*, in which case the mind will attempt

to resolve the contradiction, either by reassessing the validity of pre-existing knowledge, or by redefining the system of representations that gave meaning to that knowledge, so that in the end the new input has served to transform the conceptual frame of reference in a way that fits with both the old *and* new evidence.

The possibility of negative feedback is, according to Kaplan, a central attribute of human systems, whether individual or social. It is not necessary to present in detail the literature on cybernetics and Kaplan's systems theory to explain the importance of this phenomenon and its implications for the philosophy of knowledge. Suffice it to say that, in Kaplan's terminology, the human system is a 'multistable homeostatic system', that is, a system that is composed of more than one subsystem having the ability to restore equilibrium after an input from the environment has disrupted it. The homeostatic nature of the system means that equilibria can be restored, not only by a change in the values of some variables within the system, but also by a rearrangement of the internal structure of the system itself, and even by a rearrangement of the system's environment. Multistability, then, includes *self-change*.

To put it in more simple terms, cognitive progress can be explained by the fact that individual and collective human systems are capable of reassessing their knowledge in light of new discoveries. When such re-assessment is great enough to transform the body of knowledge, science enters what many, after Kuhn, call a new 'paradigm'. On this view, there is no particular *end* to human knowledge outside of human purpose, and there is therefore no linear, teleological, or deterministic component to the pragmatist view of cognitive progress. This is particularly obvious when one considers the pathological mechanisms that can prevent negative feedback from achieving self-correction.

The second case, then, is one in which knowledge fails to be corrected despite the existence of inputs to the system that otherwise would have produced negative feedback. In such instances, new information is either ignored or interpreted in such a way that it maintains the existing corpus of knowledge instead of transforming it. Such pathological mechanisms of regulation, which are manifested at the individual as well as collective levels, are at play when one resorts to *ad hoc* hypotheses, keeps changing definitions to force the fit of evidence, or simply ignores new evidence. In such cases, the objective of the system may be to achieve *secondary gains*, such as the preservation of comfortable ideological beliefs, the preservation of legitimacy and authority, or survival (Kaplan 1971).

Based on the conceptual framework that supports systems theory, which will be detailed below, Kaplan's view of cognitive change and

progress is then capable of taking into consideration the different variables that logical, psychological, and sociological explanations of scientific change focus on. In that sense, it provides a view that is both theoretically more comprehensive and empirically more accurate than other paradigms. More importantly, it allows for a synthesis of other paradigms in a way that is not possible by their mere addition. Kaplan's approach is capable of taking into account the structures and processes of the mind *and* the structures and processes of socialization. It is this general framework that underlies Kaplan's synoptic view, by connecting his philosophy of knowledge not only to systems theory but also to moral analysis.

Systems theory: explanation from a pragmatist perspective

Although readers who have read at least some of Kaplan's work may feel that they are now entering the domain of their familiarity with the author, I would suggest that such familiarity might be an impediment to a rereading of Kaplan, and that even the most acknowledged of Kaplan's theoretical writings might have been so for the wrong reasons, precisely because of a general ignorance of his philosophy of knowledge. In that sense, the success of *System and Process* and the subsequent fame that Kaplan's exchange with Hedley Bull (Bull 1966; Kaplan 1966) gained within the community of IR theorists (IR's 'second debate' is still remembered as the 'Bull–Kaplan debate') seem, retrospectively, to have been the result of the general mood in American IR since the Behavorial Revolution rather than that of a deep engagement with Kaplan's thought and project.

Kaplan's philosophy of knowledge has important implications for the definition, construction, and use of scientific theories. The first is that insofar as there is no single, absolute frame of reference for the apprehension of the external world, there can be no unified, universalistic, grand theory of anything, whether in the physical or social sciences. As a system of representations, meanings, and relations, a scientific theory is necessarily limited by a *given* frame of reference and its corresponding ability to illuminate a *given* aspect of reality from a *given* point of view and in a *given* manner.

This limitation should not be viewed as a restriction on a theory's explanatory power. Quite the contrary: a theory that fails to specify its conditions of validity and ontological scope fails to produce useful and meaningful statements, experiments, and predictions. From this perspective, the non-univocality of language (Kaplan 1969, 1989[1984], 1998a,

1998b, 2001 and this book) and the lack of absolute identifications between reality and thought render meaningless any theoretical system resting on essentialist, absolutist, or reductionist premises. Given that a referent properly gains existence only once it is conceptualized within a wider *system* of referents, no single theory of *x* can claim monopoly over the explanation of *x*'s properties and behavior, as is clearly revealed in the study of light, which manifests both wave-like and particle-like behavior: the theory that will meaningfully approach light as a wave function will not be able to say anything meaningful about its particle-like behavior, and vice versa. According to Bohr's (1999) principle of complementarity, no significant knowledge of light can be produced by any one theory singly: the duality of wave-like and particle-like behavior should therefore be understood not as referring to the nature or essence of light itself, but rather to the complementarity of our pragmatic theoretical frameworks of inquiry.

This issue is of course made more acute in the human and social sciences, which deal with phenomena that can sustain a much wider set of characterizations of their behavior than is the case for physical objects. In both cases, however, empirical (pragmatic) knowledge can never exhaust the meaning of reality. The key to understanding and explaining any given phenomenon, then, rests on the pursuance of multiple theoretical approaches, each of which aims to illuminate a certain aspect of its existence, from a specific and purposeful perspective. Although a comprehensive knowledge of a given object can never be reached (this would imply having exhausted all purposes and frames of reference, even future ones), a self-corrective, multi-leveled and comparative understanding of it *can* be realistically achieved. Comparative analysis therefore remains the best way to cumulate knowledge of something without either reducing the object to its *experientially determined manifestations*, or reifying the theoretical and conceptual framework that has been constructed to make sense of it (Kaplan 1992b).

A second important question concerns the logic of explanation and the method of inference. The purpose of 'science' is to identify and explain *laws* of behavior. Whether these laws are absolutely invariant or changing very slowly, scientific explanation aims to identify law-like patterns that will explain why given objects behave the way they do, and to predict that under given conditions they will behave in such and such a way. The empiricist tradition relies on the inductive inference, which, as Hume and Russell demonstrated, cannot be used to prove its own validity. For this and other reasons related to the deficiencies of inductivism, Kaplan supports Hempel's DN account: to explain is to

show why a given behavior can be expected to happen according to a system of relations that is verified to be valid under specified conditions. The theory should then also explain why an expected behavior actually does *not* happen.

For Kaplan, the DN model gives an accurate account of how scientific theories actually work (Kaplan 1971, 1974, 1989[1984]). It satisfies the requirements of scientific explanation from a pragmatist perspective. Whether we are dealing with the covering laws of physics or the dispositional-like statements of the social sciences, empirical evidence permits discrimination among different hypotheses or explanatory statements *provided that boundary conditions are taken into account*. Without a specification of boundary conditions, the theoretical and experimental propositions a theory produces would be truistic.

The question of boundary conditions is particularly important for Kaplan. In the physical sciences, the specification of boundary conditions is a necessary prerequisite that gives meaning to the systems of relations and covering laws that are, properly speaking, unfalsifiable without them (the specification of the parametric values for temperature or atmospheric pressure, for example). Kaplan explains a system's behavior on the basis of the values that selected *variables* take, while other values are held constant. These relatively constant values, the *parameters* of the system, represent the boundary conditions within which is set the validity of the system of relations among the system's variables and between them and the system's behavior. Apart from the practical advantage of reducing the number of variables to facilitate the study of these relationships, the specification of the system's parameters responds to the pragmatist anti-essentialist view of reality, which rejects universalistic propositions that do not take into account a system's state of being, its environment, and its interaction with it.

The specification of the parameters of a system also serves the requirements for a meaningful implementation of the comparative method, insofar as comparisons imply similarity in at least some values of the systems being compared. To compare the behavior of French and British political parties would be problematic without a specification of the respective parameters of their political systems: the relationships among political parties or between them and the different powers are subjected to different rules of behavior in semi-presidential and parliamentary systems. If these differences are not taken into account, the behavior of actors in the systems can neither be understood nor meaningfully compared.

The choice of which values will serve as parameters and which as variables is also important, as it constitutes a choice of *subject-matter*. After

the parameters are chosen, they can then be selectively changed so as to determine how a system's behavior changes under different conditions. This is one of the most important questions that can be asked about physical and social systems, and it can be answered by neither philosophical/normative speculation, nor by reliance on what singular, historical occurrences arbitrarily send our way. The workshops that Kaplan set up at the University of Chicago aimed at identifying how changes in the values of given variables and parameters would impact changes in the patterns of behavior of specific systems, why the same values could lead to different outcomes in different systems, or why different values could lead to similar outcomes. Most of these studies were of international systems at different *periods* or in different *cultural* systems (Kaplan 1968b). Kaplan's use of computerized models as a tool for investigating aspects of the functioning of these systems was critiqued on the basis that social life could not be emulated or represented by such soulless devices. Many critics did not understand that his computer projects were not simulations but analogs designed to investigate whether, in a world in which numbers could be given to capabilities, the playing out of the game would match the equilibrium conditions posited by the theory.[5]

The theoretical sketches and analyses developed in *System and Process* provide good illustrations of Kaplan's use of the DN model in his apprehension of international politics, as well as of his criticism of Kenneth Waltz's analysis (Kaplan 1979). Part of Waltz's criticism of Kaplan's approach was based on a different understanding of the nature and role of theory and on a lack of regard for the importance of boundary conditions. For Waltz (1979), Kaplan's acknowledgment that some observations of European politics did not fit with the equilibrium conditions posited for the system were enough to dismiss Kaplan's theory as invalid (observations viewed as falsifying instances). For Kaplan, Waltz's lack of specification of the boundary conditions under which his theory would hold precluded the formulation of any significant scientific propositions. Although propositions cannot be tested unless they can be falsified, the *judgment* of the researcher is still needed to determine what actually counts as a falsification (Kaplan 1989[1984], 1998a). Kaplan was the first IR theorist to have understood and used this principle for the construction of propositions, the analysis of empirical observations, and the formulation of expectations and predictions.

Kaplan's systems approach, then, should be understood as an attempt to satisfy the requirements of a pragmatist philosophy of knowledge *and* the minimum requirements of scientific theorizing as applied to social phenomena. The core of his theoretical framework is the very

notion of 'system', which needs to be understood correctly. A system is defined as a set of organized elements that can be distinguished from their environment by an organized pattern of relations. The concept has essentially a *practical* function, since all systems need to be conceptualized and constructed on the basis of specific scientific questions and purposes. Beyond this methodological functionality, however, the notion of system does reflect an important pragmatist *epistemic* commitment that should not be mistaken for an *ontological* one, namely that objects cannot be understood individually but only in relation to others, i.e. in their interactions with other things, in their milieus. The systems approach is, then, the logical conceptualization of this commitment, in a way that is similar to the apprehension of the planets not as individual objects, but as parts of an organized whole – the solar *system*. Based on this pragmatism, the role of systems theory is to reveal different aspects of given objects by approaching them as being parts of, and as constituting, different systemic combinations that reveal different aspects of their behavior in different conditions, environments, and interactive settings.

Systems theory, however, cannot be expected to be a theory in the strictly Hempelian sense, because of the nature of its subject-matter. In the physical world, variables and parameters take on discrete values that can be assessed independently of one another, and quantified with more or less accuracy. Human and social systems, on the other hand, pose greater challenges. The lack of independent measures precludes the formulation of clear-cut equations or even equalities in these domains (Kaplan 1967). The problems related to the definition of 'power' in political and international theory are a typical example of the difficulties social scientists encounter.

However, although social reality is obviously less clearly ordered than physical reality, this does not mean that one should relax all the requirements of scientific explanation in the social domain. Quite the contrary: it makes the specification of boundary conditions all the more important. The issue is simply that our apprehension of social reality will need to involve *judgment*. According to Kaplan, we should look for patterns of behavior that will reveal the *dispositional* qualities of human and social systems *under different conditions*. The notions of *homeostasis* and *multistability*, which, in Kaplan's view, characterize these types of systems, capture the most important epistemic and ontological commitments of pragmatism in this context. Homeostasis refers to the nature of the processes through which social equilibria maintain themselves, in particular, the systems' ability to change the values of some variables within them

and in their environment. It provides the basis for multistability, which uses feedback to initiate change and self-correction.

Another important point is related to the definition of social systems. Kaplan's typology distinguishes between *system-dominant systems*, such as a perfect market, wherein the prices of goods or the rules of the system are 'parametric "givens" for any single subsystem', and *subsystem-dominant systems*, such as oligopolies, wherein individual buyers and sellers affect the rules of the system or prices (Kaplan 2005 [1957], p. 30). The international system, according to Kaplan, 'tends toward the subsystem dominant pole'. Although this proposition seems quite reasonable given the nature of the international system and the status of states within it, Waltz considered that the very definition of a system as subsystem-dominant is a contradiction in terms, since it implies that no *constraints* are imposed on the actors. This comes from Waltz's view that systems have an existence that can be deduced from a *general theory*, i.e. apart from the actors whose relationships are central to the system. From Waltz's perspective, behavior is mainly explainable by a reference to systemic, rather than subsystemic factors, namely, the constraints that are imposed on individual actors, whether these constraints are represented by norms and traditions, or a given distribution of power/authority. Waltz's international theory, then, can find no middle ground between anarchy and rule-oriented behavior.

Kaplan, on the other hand, does not apprehend systems from an 'either–or' perspective, and his position is in this sense much closer to the one proposed by Pierre Bourdieu a few decades later. Both authors reject the important distinction between *agency* and *structure* on the basis of the relevance of two simultaneous phenomena: the reproduction of regularities and patterns of behavior and practices that account for the great degree of *sameness* that characterizes social life, *and* the individual and collective manifestations of difference and novelty that account for *change*. There is, for Kaplan, no such thing as a perfectly free individual (or group) or a perfectly determined one. The epistemic and theoretical challenge, therefore, is not to determine what is the result of freedom and what of external structures, but to understand the conditions under which sameness and difference are produced, the regulatory processes that need to be initiated in order to achieve either one of them, and the outcomes (whether gains or sacrifices) that result from these processes.

The second question is related to explanation. Setting the 'locus of explanation' at the level of general theorems that are not subject to actor inputs excludes investigations of similarities and differences in international systems, much as Carl Friedrich's and Hannah Arendt's

analyses of totalitarianism failed to illuminate important similarities and differences between the Communist and Nazi systems.[6] Although Waltz acknowledged that macro and micro need to complement each other (Waltz 2001[1959], 1979, 1990), his claim that his theory was a 'systems theory' remained pure rhetoric, since his analysis was clearly *structural* (or *general* as the term is used in economics) and incapable of bringing actors significantly into causal sequences. The so-called 'Copernican Revolution' that Waltz claimed to launch (Waltz 1979) had in fact already been initiated – and better executed – by Kaplan, who had provided in his theory sketches the theoretical framework that could incorporate both systemic and subsystemic variables, such as the behavior of different kinds of domestic systems within different kinds of international systems (see also Kaplan 1990).

The importance of the articulation of the macro and micro levels of analysis is not merely related to pragmatism as a philosophy of knowledge that rejects absolute identifications. It also results from the fact that in the social world, macro reality is more clearly influenced by micro reality than is the case in the physical world. Social theory will therefore have greater difficulty emulating the division of labor that is applied in physics, where theories of the motion of planets can develop without being affected by quantum theory. In social systems, changes in the nature or number of the system's units can have tremendous consequences on the behavior of the system as a whole, on its organization, or the flow of information within it. More generally, changes in the environment will affect the system, which may need to initiate regulatory homeostatic processes to preserve its equilibrium or even its survival. These can lead to a change in the environment itself (whether natural or social).

The macro and micro levels are complementary and equally necessary. The judgment of the social scientist will be needed to determine from which level of analysis to choose relevant variables and parameters, and which kind of theoretical framework will best serve the purpose of a given scientific inquiry. Beyond these praxical choices, the interdependence of social reality precludes the use of any grand theory of the human condition. As will be shown in the following subsection, these epistemic and theoretical commitments have very important implications for the apprehension of values, ethics, and responsibility.

Values as facts: for a pragmatic moral analysis

Moral analysis has been one of Kaplan's greatest cognitive and ethical concerns. It would be no exaggeration to say that had his philosophy

of knowledge and systems approach not been able to say anything meaningful about the human moral condition, they would have lost half their appeal for him. Ironically, moral analysis is also his least well-known contribution, despite his *Appendix 2* that served, in *System and Process*, as an outline for a pragmatist philosophy of values. The appendix should also have pre-empted the emergence of the idea that Kaplan was a 'positivist', an idea that proved resilient and that Kaplan's few words in the new introduction to the latest edition of *System and Process* (Kaplan 2005 [1957], p. 1) have probably not been sufficient to dispel.[7] The presentation of Kaplan's anti-positivist epistemic position in the previous subsections of this essay hopefully has laid the grounds for an alternative reading of his view on values.

In the classical terms of the debate on the problem of values as presented earlier in this Introduction, Kaplan undoubtedly adheres to a form of value-cognitivism, which acknowledges that values are objects of knowing, that they can be known objectively, and that knowledge of them is meaningful for the resolution of ethical problems. With his rejection of positivism and the fact–value dichotomy, Kaplan also rejects the consequent principle that science is concerned with facts alone and that values should therefore be excluded from its subject-matter. For him, the important ontological question is not whether values are facts, but rather what kind of facts values are. This perspective has significant consequences with respect to the problem of subjectivity as defined and used by value-relativism to justify the exclusion of values from the ontological realm of objective knowledge.

According to Kaplan, an idea is subjective if it has no validity outside of the subject, that is, if it cannot 'be confirmed by others using the methods of science' (Kaplan 2005 [1957], p. 240). To take an example, many people believe that they were adopted. If they were not, this statement of belief is subjective in the sense that it cannot be validated outside of the self. The belief itself, however, *is* objective insofar as it is possible for other subjects – other subjectivities – to confirm that this particular individual does believe that s/he was adopted. This criterion can thus be used to assess the objectivity/subjectivity of both 'statements of fact' and 'value-judgments': whether the case is that I see a flower that is not there or that I find this flower beautiful, the *content* of my statement will be subjective insofar as it cannot even in principle be validated by others, but my belief that my statement is correct remains objective to me as well as to others – and can therefore be either true or false. The discourse on values, then, can be subjected to the same cognitive evaluation as the discourse on facts (Kaplan 1969, 1971).

This criterion also works for both descriptive and normative discourse on values, which, according to Kaplan, can be subjected to the same scientific standards of validity. Instead of viewing the descriptive and the normative as two dichotomously opposed natural types, he acknowledges the practical and theoretical relationship between knowledge of the *valued* (of what *is*) and knowledge of the *valuable* (of what *ought to be*). From a pragmatist perspective, both questions can be investigated scientifically, which implies that both the valued and the valuable will be defined, not in the absolute or axiomatically, but in relation to the system that constitutes the subject – the evaluator. Put in pragmatist terms, the valuable is defined as the 'objectives satisfying [the] needs' of a human system, while those objectives that 'seem to satisfy [its] needs' constitute what is valued.

In this sense, what is and what ought to be are no longer conceived as dichotomous realities, since what separates the valued from the valuable is a matter of knowledge: a subject may come to value what is valuable if what is valuable is understood objectively; a subject may come to value something that is not valuable, or even the opposite of what is valuable, if her understanding of her needs is defective, if she confuses secondary gains with primary needs, or if she lacks important information about her situation, herself, or her environment. An objective understanding of both is possible insofar as it is possible to reach second-order agreement over the content of both types of assertions, which implies that these statements can be subjected to empirical testing. Kaplan's pragmatist approach to 'truth' hence avoids the epistemic contradictions that characterize the positions of both value-relativists and value-cognitivists.

The first question, then, concerns the valued – that is, values as expressed by evaluating subjects in the realm of judgment and action. Regardless of the subjective dimension of the content of any such axiological preference, its objective existence can be verified by testing whether an individual who claims to value something really does (consistency with other judgments and with action), and can reveal an individual's hierarchy or system of values: a preference for justice over freedom can be verified by the willingness to sacrifice the latter to the former. These tests are not easy to carry out, especially in such cases where it is difficult to determine that the individual's axiological assertions are truthful, but they are, in principle at least, possible.

Thus, a discourse on the valued is objectively possible and constitutes an important inquiry for both pragmatism and systems theory, insofar as it helps us determine how value-judgments affect behavior, how they and value-laden action change in different environments or situations,

and to what extent specific value-systems can sustain themselves under the pressure of internal or external disturbances. And such an approach is by definition antagonistic to any discourse on human nature that posits a universalistic relationship between given human features and a given human behavior regardless of the situational and informational factors that come into play in the production of judgment and value-based action.

The foundation of Kaplan's philosophy of values is, again, the homeostatic nature of individual and collective human systems. Homeostasis and multistability imply change (especially self-change) based on negative feedback, which is itself based on an interaction with the environment, through the transmission of information and input to the system. The output of the human system, whether as valuations or actions, will reflect the processing, by the system of perception, of these inputs, on the basis of pre-existing structures, such as a given system of meanings, including a representation of the self and the other, of the self's needs/objectives, and of the means available to achieve them.

The second question, which concerns the valuable, is of course more difficult to answer. As was the case with other cognitive questions, Kaplan starts with a rejection of absolutist definitions of the valuable, simply because nothing is valuable in itself, but is rather always valuable for someone, for a specific purpose, and in specific conditions. That breathing, for example, is necessary for the life of human beings under normal conditions of survival is made clear by the methods of science. Our knowledge of the needs associated with life therefore leads us to accept the (normative) statement 'man ought to breathe' as a correct inference. That a human will always prefer breathing to any other alternative is, however, something that needs to be empirically established rather than deduced from *a priori* statements. A human may display a wide range of *dispositions* in different *circumstances*. Although she may usually prefer to preserve her life, she may be put in situations where her dignity, for example, will be more valuable to her than life itself because of the pain that would be produced by losing dignity.

Thinking of moral norms in terms of a *dispositional* human nature (Kaplan 1989[1984], 1998b) is consistent with Kaplan's pragmatist view on facts in general: just as knowledge of light aims to reveal, under different purposeful perspectives and conceptual frames of reference, light's many dispositions or dispositional behavior (Kaplan 1994), so does the knowledge of human and social systems aim to reveal, under different purposeful perspectives and conceptual frames of reference, human and social moral dispositions under different environmental and

informational circumstances. Whether in the case of the valued or the valuable, the Rawlsian model of a moral agent who makes moral judgments from behind a 'veil of ignorance' (Rawls 1971) is clearly rejected here, as it assumes, according to Kaplan, the exact opposite of what is needed to understand valuations, namely, it assumes that what is valuable is so regardless of identity, situation, information, and environment (Kaplan 1976a, 1998a, 2006 and this book).

From Kaplan's perspective, then, a philosophy of values that discards dispositional human nature and its constitutive systems – among them the system of perception – starts with the wrong premises and asks the wrong questions. To speak of values as if they were endowed with an absolute content/meaning can only lead to authoritarian philosophies that fail to understand the reality of judgments and value-laden activity, and thereby shift human responsibility toward faulty loci. It also leads to impossible dreams of absolute freedom and justice. For Kaplan, ethical dilemmas do not arise from the fact that humans can never achieve a given ideal of justice, but from the fact that the ideal is different for different humans and can therefore not be achieved for all at once.

The hope for humanity, nonetheless, lies in our ability to reflect on our condition comparatively, retrospectively, and even hypothetically (the procedure described in Chapter 3): against the veil of ignorance, Kaplan puts forth multistability as the process through which we transcend the 'now and then' of our individual subjectivity, toward an understanding of both what we share with others and what differences are worth preserving. Beyond this, ultimate justice or ultimate freedom (freedom without constraints, agency without structure) are 'death wishes' that merely fool us into believing that we can reinvent ourselves and create our own condition without incurring any costs (Kaplan 1969).

Kaplan's test-in-principle assumes that under different conditions (of environment, information, history, role, etc.…) we would have acted differently and valued different things. It also tells us what the valuable looks like for other people placed in different positions than ours, and therefore allows us to move beyond time, place, culture, and subjectivity, while being aware that these cannot be discarded or transcended absolutely. There is space, here, for an ethics of both *tolerance* and *responsibility*: tolerance for systems of valuations other than ours, and responsibility for bringing the valued closer to the valuable.

From this perspective, Kaplan's view on ethics is reminiscent of Plato's simile of the cave: multistability, which operates through an increase of theoretical and practical knowledge, doesn't only explain that the one who left the cave will modify their system of representations. It also

creates the expectation that their return will be guided by the responsibility to extend this regulation to those whose access to knowledge has been limited by their circumstances. I may not be able to morally condemn tribesmen who eat their elders because their normative system has been shaped by the scarcity of their resources. But I am responsible for showing them how to increase their resources so that the price for achieving the valuable for all is less burdening on the one.

Justice, then, is an aspiration that never ceases to drive us, and that we can never hope to achieve fully. *Contra* the ethics of the Enlightenment and its liberal offspring, Kaplan does not see any guarantee that progress in one area of human development will necessarily entail progress in others. It might even be that those institutions that are most needed for the satisfaction of some of our needs are impediments to the satisfaction of others. Ultimately, our actions will continue to be guided by judgment, or praxis. Kaplan therefore finds Aristotle's classification of ethics and politics as 'practical' disciplines to be closer to the reality of the matter than that of the rationalists and positivists, who believed that the good and the just could be subsumed by the absolutely true with no further effort than the pursuance of universal objectivity.

Knowledge and action: pragmatism as an activist philosophy

The notion that purposeful action is constitutive of knowledge was presented earlier as a central premise of both Peirce's and Kaplan's pragmatism. What concerns us here more specifically is the issue of how pragmatism can guide social action. As noted earlier, social scientists have consistently been divided between the ideal-typical positions offered by positivism and critical theory. Since Kaplan's philosophy departs from both positivist and postmodern philosophies, its view on the problem needs to be explicated here.

Kaplan adheres to an 'activist' philosophy, which recognizes that knowledge entails a commitment, or at least a desire, to change the world. Marx also shared this view, which in his case was supported by the idea that emancipation from 'distorted consciousness' would necessarily also lead to the rejection of the conditions that were responsible for producing it. It is, however, not clear how Marx could reconcile the view that all existing norms are superstructural, ideological phenomena that have no independent, universal value, with the idea that a better, more 'just' world is worth bringing about through historical action. That historical materialism should contribute to a realm that it considers to be an illusion has thus been viewed as a paradox that has sustained

important debates in political theory (Lukes 1985; Nielsen 1989; Wood 1991).

The paradox is revealed in particular in Marx and Engels's use of the notion of 'justice'.[8] As an existential, empirical reality, justice is an ideological concept whose content translates and serves the values and interests of the dominant class. Any dominant notion of justice that the scholar finds in existence at any particular time in history reflects the 'false/distorted consciousness' of this class of producers. But this causal relationship that links the economic structure to the superstructure also leads Marx and Engels to consider that any given normative order that results from a given division of labor is 'just'. Insofar as the capitalist mode of production objectively produces specific social inequalities, it produces a specific notion of justice that justifies and preserves such inequalities. Both these inequalities and this given understanding of justice are 'just' in the sense that they are explainable/predictable from the point of view of historical materialism. On the other hand, these same capitalists whose interests and actions produce these inequalities and promote this given understanding of justice, are portrayed as 'vampires' whose order needs to be destroyed so that man can finally be emancipated from any form of alienation, in a communist society where he would finally be free, and supposedly enjoy 'real' justice.

That Marx spoke with different voices (the scientist, the activist, the philosopher) might explain his paradoxical treatment and use of values. The problem of reconciling these different discourses on valuations and on the relationship between what is and what ought to be nonetheless remains unsolved. In the case of Marxian thought, this problem is intrinsic to the fact that the objective relationship between ideology and historical materialism, or between the historical and the absolute, remains unexplained.

Because he adheres to a pragmatist understanding of truth and objectivity, Kaplan does not need to explain any paradox, since he avoids the contradiction altogether. And since he rejects the positivist fact–value dichotomy as well as absolute definitions of both what is and what ought to be, he speaks with a single voice that naturally reconciles the objective meaning of reality with the objective meaning of norms as they are both illuminated by pragmatism. Instead of the contradiction that characterized Marxian thought, Kaplan's philosophy is, rather, characterized by the type of circularity that is sustained by the shape of a spiral – an open-ended circularity that is consistent with his view on the evolution of both knowledge and judgment. As a comparativist, a pragmatist knows that what is valuable here/now is not valuable there/then.

Since it is not possible to predict today the system of representations that we will use in the future to assess (future and past) knowledge, the scholar cannot establish an absolute relationship between her objective evaluation of present reality and her prediction that present norms will be equally valued in the future.

If knowledge, then, is to guide social progress, or at least progress in some areas of human life, social action has to reflect the self-corrective nature of knowledge. Insofar as our norms change with our understanding of ourselves and the world, the development of human societies should allow such a regulation to remain possible. This has important implications in the domains of legislation, education, science, health, art, and public policies in general, as Kaplan shows in this book. Pragmatism, therefore, considers that our evolving understanding of existential reality inevitably changes our preferences and judgments. In order for multistability to operate and make regulation possible, those norms should be preferred that do not imprison us in pre-determined patterns of behavior, but rather render possible the future ability to envisage choices that cannot be envisaged in the present. This principle provides an interesting grid for the interpretation of Kaplan's sustained commentaries on legal and societal matters.

Beyond a few specific areas of social action where prediction might still be relevant and reliable, science fails to guide us toward justice. The importance Kaplan gives to judgment and praxis as fundamental elements of our knowledge of social reality is the ultimate key to his view on the relationship between science and progress. But beyond this, science cannot offer ultimate answers to our most tormented questions: the future is open, there is no end to history, no telos to achieve, no final destination to reach. It follows that ethics, metaphysics, religion, and art will never be entirely subsumed by science, not even pragmatist science.

This open-ended circularity doesn't merely entail a permanent re-assessment of our normative valuations in light of multistable knowledge. It also implies a moral connection, not simply with a present that is existentially imposed on us, but with the past and the future as well. Looking back at our history, we learn about who we were and how we got to the present; looking ahead, we understand that our present actions and the values that support them will lead us down a specific path, one that is only partially chosen for it is only partially understood. Against teleological, deterministic, or evolutionary accounts of history, science, and progress, Kaplan's pragmatism thus reinstitutes moral choice and responsibility as meaningful concepts because it accepts the inevitability

of ignorance, doubt, and error as well as their necessity for the process of multistability to operate dynamically.

Pragmatism, then, entails a reflexive ethos at both the individual level of personal knowledge, and the collective level of scientific knowledge. This reflexivity is only implicit in Kaplan's writings. It is nonetheless so well grounded in his philosophy that my final contribution to this rereading of Kaplan has to end with an attempt to explicate how his pragmatism is an appealing model for a contemporary understanding of reflexivity.

Reflexivity in the social sciences: Kaplan's contribution to the ultimate epistemic question

I have, elsewhere (Hamati-Ataya 2010), shown how Kaplan's pragmatism and systems theory can serve reflexivity better than the competing approaches to world politics offered by Hans Morgenthau and Kenneth Waltz, which typically represent the extremes of what I then proposed to call 'philosophical' (a priori) and 'scientific' (positivist) explanations. This analysis was based on the idea that reflexivity should 'be viewed as a foundational intellectual and epistemic posture made necessary by the acknowledgement of the ontological unity of subject and object', as illuminated by postmodern philosophy. I explained how this anti-positivist posture could only be adequately and meaningfully served by transcending a series of interrelated dichotomies, such as knowledge vs. judgment, facts vs. values, object vs. subject, objective vs. constitutive theory, and theory (explanation) vs. meta-theory (meta-explanation). A central element of my argument was that in order for an IR theory to be truly reflexive, it has to rest on an epistemology that acknowledges the impact cognition and valuation have on each other, and an ontology that can address values as equally knowable facts. These two characteristics would then make possible an investigation of the way science affects politics, and vice versa. On this view, it would then be possible to consider – and study – IR knowledge as one of the manifestations of world politics, that is, as an object of IR knowledge itself.

This question deserves to be addressed beyond the specific concerns of IR. Kaplan's epistemology, his view on science and on the processes that govern the evolution of knowledge, his conception of theory and explanation, and his analysis of values and their role in understanding action and in shaping human learning, naturally lead to what I believe is an original and valid interpretation of Kaplan's contribution to the problem of reflexivity.

I have, earlier in this Introduction, identified reflexivity in its two components, namely, *cognitive* and *moral* reflexivity. Cognitive reflexivity is a core concern and foundation for the sociology of knowledge and some variants of the sociology of science. In Foucault's reading of the logical constitution of the different fields of knowledge, he observes that the human sciences are the only disciplines that can objectivate themselves, that is, produce such knowledge as a *sociology of sociology* (Foucault 1970). This notion equates Bourdieu's view of the possibility of an 'objectivation of the objectivating subject' (Bourdieu 2001) – an investigation he also thought to be intellectually and morally *necessary*. I have earlier suggested a different formulation of the problem by referring to its philosophical origins: in Hegel's and Marx's attempts to transcend the contradictions between the absolute and the historical, and in Mannheim's acknowledgment of the dichotomy between the specification of the epistemic conditions for the validity of knowledge and the specification of its social determination. The problem, clearly, refers to epistemic circularity and mechanisms of infinite regress in interpretation.

Kaplan's pragmatism offers some interesting answers and guidelines for a meaningful treatment of these problems. As shown previously, his adherence to a pragmatist understanding of truth that rejects absolute identifications between objects and referents, together with his inclusion of multistability as a fundamental mechanism for the acquisition and development of knowledge, provide one possible starting point for the transcending of the epistemic dichotomies that have hitherto prevented both positivists and post-positivists from reconciling the logical contradiction between the commonality of existence and the historicity of knowing. Concretely, Kaplan's pragmatism also provides the means to identify and carry out empirical research programs that actually investigate the ways wherein the conditions of knowledge-production affect the interpretation and status of its validity at specific points in history. In Kaplan's terms, the *sociology of* knowledge entails an inquiry into the processes that govern the constitution of epistemic and empirical *frames of reference* (1976b).

On this view, systems theory, which tries to explain how specific social systems regulate themselves through time within changing environments, provides the conceptual, methodological, and empirical framework for a study of knowledge as a *system of action*, whether at the macro-level of the human civilization, of specific cultures, or of specific fields of study, or at the micro-level of developments that affect specific

debates, concepts, or sub-fields of study – what is sometimes referred to nowadays as social epistemology.

The pragmatist systems approach proposed by Kaplan allows us to 'problematize' the 'relationship between the social world and the social construction of meaning' (Guzzini 2000), which constructivism views as one of its fundamental concerns. It also provides us with the means to actually generate the research questions that would translate this epistemic concern into a scientific project, and to carry out the empirical research needed to answer them. Among these reflexive questions, the ultimate one is the following: what systems of thought – in form and content – best satisfy individual and collective regulatory needs? This would entail a comparativist inquiry into the evolution of systems of thought within their ideational and material environments, and based on the structures and processes governing the mental, institutional, and political individual and collective systems that produce them. It would allow us to understand how specific *cognitive ideologies* and specific *moral or political ideologies* are articulated with each other within an understanding of how specific material structures affect the evolution of thought.

The fact that Kaplan's pragmatism also produces an objective moral analysis that does not segregate valuation from cognition is the linkage that connects moral reflexivity to cognitive reflexivity. Moral reflexivity entails a reflection on how individual and collective ethical preferences affect social action (including science) and, in turn, how social action affects our changing perceptions of the good and the just. It has hitherto been mainly addressed from a purely speculative, normative, or metaphysical perspective. It finds objective sources in Kaplan's pragmatist moral analysis.

In the final analysis, the knowing subject will always be faced with the dilemmas arising from her awareness of both the historicity of her thought and the historicity of her values. Without an acknowledgment of the former, she is condemned to epistemic blindness. Without an acknowledgment of the latter, she is condemned to moral blindness. The reflexive posture, then, can only emerge from an ethical commitment, which is itself the product of its own historicity. Such a commitment, however, can neither be born of a positivistic perception of the world (including the self), nor of metaphysical or ideological speculation. That Kaplan's pragmatism should provide some answers to the establishment of a reflexive knowledge should therefore not come as a surprise. Reflexivity is, after all, the corollary of his view of knowledge as a self-corrective engagement with a morally meaningful reality.

Part I
A World View

1
The Operations of Mind That Produce Language

Many writers speak of language as if it is a matter of words and sentences the meanings of which can be provided by inspection. However, language, and its evolution, apart from syntax, results from a mode of inquiry in which *names relate concepts to referents*. Naming is used to distinguish objects from other objects.

Concepts are used to characterize the qualities of referents. The naming of qualities separates them from other qualities. Thus, 'color' and 'brightness' distinguish related qualities from each other. 'Blue' is a specific value of 'color' and 'dark blue' is a specific value of 'blue'. In the current world view, the concept of color can apply to some types of objects and not to others.

Referents exist objectively, that is, they are objects of knowledge, only insofar as names apply concepts to referents. The belief that referents are objective and that thoughts are subjective misrepresents a recursive process in which minds relate different types of objects to each other.

Thinking and experiencing have no locations in space or time. When the thought or experience of an agent is objectified, that is, when it is treated recursively as an object of thought, it can be given a location in space and time. It is then that the objective procedures of science can be applied to it. The failure of some philosophers to understand the recursive character of this process gives rise to the supposed dichotomy of objective referents and objectless, and hence mysterious, subjectivity.

Toward the end of this chapter, while discussing the error in Gottlob Frege's (1952) claim that the same object may have more than one sense, I will show from a different perspective why Charles Sanders Peirce's claim that the meaning of an object depends upon its use is incorrect.

My position is that the meanings of names, that is, of signs, not of objects, depend on how they link concepts to referents, that is,

on how they are used to *designate* objects. Naming separates objects from a surround by applying concepts to incoming information. This process designates something as an object if it is relatively unchanging. Names, including numbers, are employed in theories *in their capacity as signs*. This enables them to function *analytically*. Newton's theory can be applied only if the elements of the theorems, for example, mass or energy, can be given numbers. This may be determined pragmatically by using instruments to provide cardinal measures. Then the application of the theory to referents provides an interpretation of the theory that is related to this application within the framework of a contemporary world view.

It is not possible to identify the referents of a theory and to distinguish them from other referents unless one starts with an interpretive schema, a *world view*, that permits this. One can distinguish the referent, that is, the object, 'morning star' from the object 'evening star' only if one can distinguish the concepts 'morning' from 'evening', 'star' from 'meteor', and 'light' from 'dark'. In short, all inquiry, including theoretical inquiry, has a foundation in a world view, although an evolving one, in which its analytical and ideographic elements evolve in a complementary fashion along with the world view within which they have their places.

That judgments of truth depend on the fit and density of available information will be supported in the next chapter. The *complementary* relationships between the namings of objects and the characterizations of objects are central to our understanding of the world. They permit alternative formulations of the relationships between objects, that is, referents, concepts, and names. This process is dialogical, even if only within the self, insofar as it involves recursive evaluations of evidence. It is dialectical insofar as changes in some of these hypotheses require other changes in the ways in which names are perceived to link concepts to referents. Names, thus, are used to designate referents as the objects that fit the characterizations that constitute meaning. That is why the meaning of a name, but not of a referent, is related to its use.

Understanding of this process, as will become evident in the second chapter, is linked to the claim that the truth of a theory is related to the fit and the density of existing information. Thus, when I claim that a theory is true, I am claiming, as I will show in the second chapter, that its use fits the overall body of available information, that is, the current world view, better than alternative theories, not that it follows from a set of axioms.

Ludwig Wittgenstein did not appreciate the complementary relationship between names or numbers on the one hand, and senses (meanings)

on the other. This led him to invent a language games approach that loses the *combinatorial power* that logic and theory provide through the use of names and numbers *irrespectively of their meanings*. This will be illustrated in subsequent chapters. A related failure, although from an opposed perspective, drives the belief of many physicists that theories can account for the world in a non-evolving foundational sense. It is the openness of an analogical system of interpretation that leaves space for new information recursively to influence the development of new theories or logics that account for evidence that existing theories cannot account for.

Correlatives

The designations of objects invoke correlative concepts. No correlative concept can be understood except by contrast to its polar opposite. In particular, an understanding of the correlative relationship between the nomothetic and the ideographic aspects of knowledge is indispensable to judgments of truth, whether of theories or of individual events or experiences. Being and becoming are correlatives. More importantly, ontology and epistemology are correlatives. No statements about referents are meaningful until they are related to the concepts that characterize or designate them. However, it is not possible to apply the concept of truth to the designations of objects without taking into account the instruments used to make characterizations, whether these are neurological systems or microscopes. Efforts to treat either ontology or epistemology as foundational will produce only needless puzzles.

I have attached an addendum to this chapter that gives a dense account of how I. Langmuir used theory to refute apparently factual, that is, ideographic, observations of the results of scientific tests. This addendum illustrates the way in which nomothetic information is intimately involved in determinations of ideographic information and vice versa. The contrary errors of Wittgenstein on the one hand and of Saul Kripke and Hilary Putnam on the other stem from a failure to appreciate how correlatives relate to complementary judgments of truth within the framework of partial or whole world views.

One approach absolutizes the ideographic. It treats description as if there is such a thing as a designated object that can serve as a *fixed* basis for the application of contexts. The designation of an object to which contexts are related cannot be determined apart from an examination of a larger, and evolving, realm of knowledge within which it is distinguished from other objects by the qualities and measures of qualities

that are linked to it. W. V. O. Quine's powerful 'The Two Dogmas of Empiricism' (Quine 1951) – a simplified version of which I included as an appendix in *Justice, Human Nature, and Political Obligation* (Kaplan 1976a) – undermined the thesis of logical positivism.

The other position treats analytics as if in principle fixed designations can govern individual subject matters. For instance, the principle of contradiction is considered to be a universal axiom of logic. However, I show in Chapter 4 that there are analytical systems within which the principle of contradiction does not have a role.

The evolution of knowledge

I share with my late, and distinguished, colleague, Mr. Leo Strauss, the belief that the great period of Greek philosophy represents a defining moment in human civilization that has never been matched. It is inspiring to revisit the ways in which Socrates and Plato moved philosophy beyond the positions of the pre-Socratics and in which Aristotle moved it beyond the position of Plato. However, just as the classical Greek philosophers refused to accept previous positions as inviolate, I believe a significant number of central Greek positions require review.

The history of philosophy, I believe, is a *never-ending* saga of reformulations that result from the discovery of problems in existing paradigms, including the classical Greek paradigms. Our understandings of the world rest on a dense set of interpretations of informational inputs the fit of which is called into question by the recursive consideration of new information.

Aristotle's distinction between prior and posterior analytics, for instance, was related to his distinction between unitary and composite objects. Experience, according to Aristotle, plays a significant role in the understanding of composite objects. This led him to limit the role of theory with respect to composite objects. Aristotle's analysis advanced on Plato's analysis by showing why unitary objects supported theory in a way that composite objects could not in the classical Greek state of knowledge.

Cracks in the Aristotelian edifice began to emerge by early modernity. Syllogistic logics could not be used to prove relevant propositions that were known to be true – for instance, that the head of a cat is the head of an animal. This led to the development of new systems of logic that permit logical analysis of data that could not be brought within the framework of syllogistic logical systems. 'If a cat is an animal and if x is the head of a cat', then 'x is the head of an animal' followed from

the axioms of new Port Royal logical systems. Thus, the appropriateness of a system of logic can no more be determined independently of ideographic factors than ideographic identifications can be supported in the absence of theory, a position that is examined in the addendum to this chapter and developed further in Chapter 4.

Galileo transcended the formulations of classical physics by showing that the instruments of his day could be used to make measurements of the qualities of objects that are common regardless of the objects to which they are applied. These measures then were employed in theorems that were used to make predictions that were confirmed by practice. Such novel positions led to the modern paradigm.

The modern paradigm made more extensive use of the concept of necessary truths – axioms which if true are necessarily true – than did the Aristotelian paradigm because it was able to produce general theories based on axioms that took account of experience and that applied to composite objects. Its problems arose from the respects in which it agreed with Aristotle that true theories would apply without exception. However, nothing, including Newton's theory, is independent of boundary conditions. Hence, no theory can be true in Aristotle's sense of necessary truth.

The modern paradigm began to fray even further when J. G. Fichte questioned Kant's account of knowledge. Fichte's major work *The Science of Knowledge* (Fichte 1982[1970]) made use of a transactional account in which self-consciousness is produced by the reflexive – I prefer the term recursive – consideration of consciousness, in which consciousness is as much an object as is carbon. Hegel applied recursive transactional analysis both to the material objects of experience and to the concepts that apply to them. That is why he said that concepts are objects of experience. That was Hegel's answer to Cartesian dualism. Agency was external to evidence. The beliefs of the agent were objects equally with the knowledge of the agent that his beliefs were knowledge to which he had recursive access.

Thus, concepts characterize, that is, interpret, objects, ranging from social conditions to the neurology of subjects. Hegel believed that knowledge must have a certain foundation, that is, that it must rest on an *identity* between concept and referent. Because recursive transactional processes did not provide such a foundation, identity – that is, necessary truth – was relegated to the end of history in the Absolute.

When Peirce rejected the concept of truth, he was rejecting truth *only* in the sense that a premise if true is necessarily true. He did not reject the notion that something may be true in a pragmatic sense, that is, in

the sense that its application will accord with experience. Because this conflicted with the belief of many physicists that Newton's system in principle was identical with the world of referents, Rudolf Carnap used recursive logical analysis in an attempt to make the concept of identity meaningful despite differences in interpretation. This is why Carnap's brilliant, but incorrect, version of necessary truth was so firmly accepted by so many advocates of science.

The mere fact of interpretation is not sufficient to undermine Carnap's thesis. A computer interprets the signals it receives but its digital operations, that is, its use of names and numbers, follows inexorably from the code it employs. The analytic aspect of theories is embedded in their consistent use of names. However, the application of an analytical system to the world cannot be reduced to a digital form, though the common measures of physics permit it to come close. Yet Max Born was able to prove that over a sufficiently long sequence, prediction will fail.

Quine's convincing attack on positivism in his 'Two Dogmas of Empiricism' is supported by other demonstrations. Werner Heisenberg was able to prove that an accurate measurement of one related observable quality such as position produces uncertainty in a related observable quality such as momentum. Correlative modes of inquiry are in a state of complementarity. Kurt Gödel was able to prove that there are true arithmetical propositions that do not follow from the axioms of arithmetic. As other logicians have shown, there are areas of inquiry within which the axiom of contradiction does not apply. I was able to prove to the satisfaction of an eminent mathematician, Saunders Mac Lane, that a theorem is an analogy by proportion from the standpoint of recursive, that is, metalinguistic, analysis.

Hence, the modern paradigm, to the extent that it retained the concept of necessary truth, became untenable. All theories are analogs when applied to the world and, thus, are not identical with their referents. At some point, they fail to account for experience. I was able to show that even the most simple of concepts, a point, was not identical with its empirical referents (see Chapter 2). Thus, all theories are analogies.

Nonetheless, Newtonian theory, although surpassed by relativity theory, still gives superbly good accounts of the world. Other theories may not do as well, but many have significant pragmatic utility. Thus, the philosophical question that needs answer is not whether theories can be said to be true but what one means when one says that they are true.

To answer this question one must move beyond Peirce's rejection of an identity between concepts and their referents to an analysis of how one moves from a theory of a system of names (whether of a solar

system, a social system, or a moral system) to its application in a world in which general theories such as that of Newton are usually not available. This will make *systems theory* central to analyses that apply to some areas of knowledge in which general theories such as those of physics are not possible.

I will attempt in this chapter to show that theory, including systems theory, does not depend on identity in the Aristotelian sense if the nomothetic and the ideographic aspects of reality are understood as complementary parts of a pair in which *each is what it is only with respect to the other*. A *post-postmodern* philosophy needs to start with the recognition that the complementary poles of correlatives are metaphors that, when examined, permit judgments of the truth of theories or propositions that are related to the boundary conditions that are believed to apply to them. An account of this position starts with the use of signs.

The use of signs

How theories can be used depends in part upon how names can be used. It is well-known that signs (names) relate discontinuous concepts to elements (referents) of continuous sense inputs. Moreover, mind plays an active role in perception of the world. For instance, the continual movement of the pupil of the eye means that the sensory inputs from a stationary table are inputted to the neurological system as moving. The neurological system then rectifies these inputs so that we see the table as stationary – that is, it rectifies our perception of the external world. Such relations fuel incautious hermeneutic accounts that are presented as foundational. Wittgenstein and the philosophers of ordinary language make a distinction between data and contexts that cannot be sustained.

No discontinuous concept can be identical with a continuous input. And no concept can be distinguished from others unless it has at least tentative boundaries, that is, unless it has discontinuous aspects. That qualities lack sharp boundaries is attested to by the fact, for instance, that training can improve color discrimination. Thus, even at this elementary level, correlatives – in this case, continuous and discontinuous – are crucial to understanding. Hence, attribution of truth to a theory represents a claim not to universality regardless of boundary conditions, but to the ability of a theory to provide *a tool for exploring the world successfully*.

Wittgenstein's language games and the ordinary language thesis are poor candidates for science because they reject the analytical tools that

are essential to science. They ignore correlatives and stress how contexts shape meaning. However, there is no fundamental distinction between a context and the named object or quality that it qualifies. Each is a product of the application of concepts to named elements of experience. References to contexts are references to changes in the use of names. They constitute shifts in meaning. Thus, there is no such thing as a universally true designation.

We treat our uses of names and of relations among them as being hypothetically true. This enables us to anticipate the consequences of our activities, even if with considerably less than certainty. And we make judgments that are based on the range of our experience and the density and fit of the elements of our knowledge.

If a person calls a head a hat, we regard this as a problem because this choice does not fit experience, not because he is employing names differently. In a world in which heads could be removed and replaced with other heads, a head might indeed be a hat. In that world heads can replace heads because they continue to govern the choices of the being that makes the choices.

Correlatives and the self

Determinate and indeterminate, continuous and discontinuous, ideographic and nomothetic or analytic, metaphoric and literal, freedom and constraint, are all correlatives. Consider determinate and indeterminate. The theorems of quantum theory are probabilistic. However, the uses of these theorems are deterministic. Probability theory is applied to coin tosses but the outcome of any particular toss is determined by the laws of physics and the initial conditions of the toss.

The freedom of a human to walk but not to fly is bounded by the constraints imposed by legs as contrasted with those imposed by wings. A change in structure may allow new freedoms and it may exclude previous freedoms. The concept of freedom cannot be applied to the world except within an overarching framework that relates freedom to constraint in various circumstances.

Objectivity and subjectivity are correlatives. Recursive analysis, in which both names and the concepts that are applied to named referents are reconsidered from the standpoint of additional evidence, reveals that each implicates the other. As these implications are taken into account, dialectical changes occur in both the ideographic and nomothetic aspects of knowledge. However, this dialectical process cannot be reduced to a logic, for it involves recursively considered judgments

about dense, interrelated ideographic and nomothetic aspects of the experienced world.

Subjectivity, time, and space

Measures of time and of space are measures of qualities of objects or of relations among qualities of objects. When a ruler shows that a pencil is five inches long, the ruler is not compared with a space external to it. The scientist who makes measurements may compare them with the measurements other instruments make, but he cannot compare them with a space that is external to these measurements. He can judge which instruments provide more consistent or more useful information. But his improved measurements are not approaching a limit that has existential reality independently of the transactional process.

Subjectivity, that is, experience, is not in time or space until it is treated recursively and becomes an object of experience as a referent of thought. Then it can be attributed to an individual in a time and place as an element in a transactional process.

Knowledge of the self and of others is not provided by simple inspection of incoming information. As ethnologists have demonstrated, few animals are able to recognize themselves as distinct individuals. We learn about the self and others by recursive analysis of informational inputs. In some respects it is possible for someone to know another person better than that person knows him or herself. Knowledge that the self is a framework for inquiry much as an inertial system is for the measurement of time is provided by recursive analysis and not by simple inspection.

Thus, just as each of two observers on independent inertial systems may state correctly that time lengths on the other's system are longer, what is good and what is just may be related to their social placement. I will show in the essay on a multi-stable system of justice in Chapter 3 that this is the case. However, this no more leads to moral relativism than Einstein's special theory leads to physical relativism.

Potentially, observers on different moral paths can recognize that their wants and needs are related to their paths. This does not necessarily close the moral space among those on different paths, but in principle it can create a common understanding of the playing field that may moderate conflict under benign circumstances.

The former conclusions are closely related to how language functions in inquiries. No correlative characterization applies to an object as such. Instead different uses of names refer to different hypothetical objects.

The task of inquiry is to relate hypotheses employing concepts to referents in a critical fashion. Wittgenstein and Frege hypostasized meanings and rejected theories that permit the complementary reconciliation of names and referents. If they had taken account of Newton's use of the concept of initial conditions, they would have avoided this mistake.

Theory

A theory is a corporate entity. This is true of a general theory. And it is true of a systems theory. When the concept of truth is applied to the use of a theory, its referents consist of the aspects of the world, that is, the initial conditions, that are relevant to the equilibrium expressed in the theory. When theories are applied to the world, their elements require specification. For instance, applications of Newton's theory to the distance a bullet will travel require specification of the elements of the bullet, the projecting device, and the medium through which the bullet will travel. These specifications are idiographic. When my 'balance of power' theory is related to the world, the conditions of the actors and of the assets they can use require specification. Neither in physics nor in the social world can any conclusions be derived from a theory in the absence of such intermediate steps.

Ordinary language theorists have sometimes employed the ideographic elements of the former process to cast doubt on the nomothetic character of theory. They confuse the analytical statement of a theory with its use. A better response is to analyze how the nomothetic and the ideographic aspects of theory complement each other. I will show in Chapter 8 why ordinary language approaches and contemporary realism are ineffective scientific approaches. A preliminary sketch follows.

Ordinary language and theory

The failure to recognize the complementary character of theories and propositions results from a failure to recognize that it is the meanings of names and not of objects, that is, of referents, that vary with use. This is a subject I introduced in the beginning of this chapter. I will clarify it toward the end of this chapter. If theories consist of names and numbers, then as long as these are invariant until applied to the world – and they are invariant, *at least in principle*, as signs – theories *are* analytical wholes.

Variation enters when theories are applied. This is why Newton specified the use of initial conditions when applying a theory. The results of

the applications of theory are contingent upon the initial conditions. The meanings of the designated elements of theory vary with applications. This is why the ordinary language philosophers, who do not observe this distinction, both lose the power of theory and misunderstand how and why the meanings of designated objects vary with the applications of theory.

The use of names in theories, thus, is fundamentally different from the use of names in ordinary language sentences. 'Eye' of needle and 'eye' of hurricane have only some things in common. In this sense, the use of names in ordinary language is not, and cannot be, univocal. However, to argue that because ordinary language is not univocal, therefore, general theories cannot be found, as Robert Cox did in his review of *New Thinking in International Relations Theory* (Cox 1998), apart from confusing universality with generality, mistakenly treats ordinary language as a superior substitute for the use of names.

I do not know what Cox means by 'universal theory'. If he means an invariant relationship between all c's and all e's – and this seems to be what the ordinary language philosophers believe – he does not understand Newton's theory, the theorems of which apply to relations among the qualities of things. Newton's theory is a general, not a universal, theory, as I will explain in Chapter 6. I am not aware of any scientific theory that is universal as Cox and followers of the ordinary language thesis apparently use that concept. The position upon which they base their thesis is inherently irrelevant to the analytical aspect of a theory.

In any event, properly stated theories have an analytical form. And interpretation does not defeat the efforts of analytical philosophers to relate the elements of theory independently of interpretation. Computers successfully apply incoming digital data precisely because the elements function as signs. In effect, the ordinary language philosophers confuse names with objects. Thus, they fail to see that the idiographic pragmatic application of theories complements their nomothetic or analytical statement; it does not exclude it.

Newton's theory is a general, but not a universal, theory because it includes a set of theorems that apply to all physical interactions within the domain of given types of instruments of measurement. If Cox meant to argue against general theories, then an absence of univocality in ordinary uses of language, for instance, power, clearly does not rule out general theory in physics. Cox's position replicates Frege's error. Cox made no effort to come to grips with the incisive critique I made in 1971 (Kaplan 1971) of the ordinary language position, including its attempt to substitute maxims for theories (see Chapter 8). Realism in international

theory founders, as I will show in Chapter 9, on the willingness of theorists of international relations to accept the ordinary language thesis without confronting its fatal weaknesses.

Whether general theories can be found in fields other than physics does not depend on univocality in ordinary language. In Chapter 6 I discuss the conditions under which general theories are possible. And I subsequently discuss how systems theories work in areas of science in which general theories are not feasible, that is, in areas in which common, or cardinal, measures and common designations are not available. However, I will first address how this is related to the acceptance of particular theories as valid.

How to judge theories

From the 1940s through the 1960s many philosophers of science advocated different definitive protocols for the confirmation or falsification of theories. These formulations, at least implicitly, relied on a concept of necessary truth. They elevated the nomothetic aspects of the world similarly to how Wittgenstein elevated the ideographic. Because each of correlative pairs complements the other, I argued for judgments based on the fit and density of the relevant evidence, although this evidence may include items that confirm or disconfirm a position within a particular framework *of knowledge* (See Kaplan 1989[1984]).

On the one hand, as I argued in my article in *The Review of Metaphysics* (Kaplan 2006), a revised version of which is the second chapter in this book, some translations of the Rosetta stone can be judged to be true because of the fit and the density of evidence. However, Quine showed that a word-to-word translation between languages is not possible because the different meanings of referents cannot be uniquely mapped. On the other hand, I disagreed with the assessment of divine intervention in the Fátima case (see Chapter 2) because the fit and the density of evidence are not sufficient to sustain the hypothesis in the *current* realm of knowledge.

General theories and systems theories

The theorems of a general theory specify how the names of the *qualities* of referents are related to each other. They do not mention the *referents,* that is, the objects, to which the theory applies. A systems theory, on the other hand, applies generalizations to the *names* of those empirical elements of the world, that is, referents, that find at least a *sustained*

equilibrium within a set of boundary conditions. Newton's general theory does not mention planets and suns. Kepler's theory, on the other hand, is a systems theory. It states the regular relationships among the elements of the solar system such as sun and planets. My international systems theories state regular relationships among different types of international actors.

Newton's general theory can be used to deduce the impact of an experimental intervention on a status quo. It applies *ideographic* information, that is, the pragmatic or realistic measures of the *analytic* elements (qualities) of the theory to the analytical, statement of the theory. Thus, if one wants to learn whether an increase in the range of a projectile can be achieved by such and such an increase in a type of gunpowder, this can be deduced from Newton's theorems given the states of the projectiles and of the medium through which they travel, that is, given what Newton called the *initial conditions*.

Because the state conditions of the world change with events, theories must be *engineered* to the conditions of a problem. The failure to understand how theories are engineered to the initial conditions of a problem lies at the heart of the mistakes made by Wittgenstein and the philosophers of ordinary language. This will be explored further in Chapters 6, 8, and 9. This is why a theory of history or a theory of the world is not possible, although, as I show in Chapter 2, a world view is relevant to the acceptance of a theory.

Two conditions are requisites for *general* theories that permit *deductions* by applying a theory to initial conditions: common measures for the designated elements of theorems as in physics, or fungible units for the elements of theories. Dollars perform this function, although unreliably, in economics. In short, general theories are possible if the quantities of the relevant qualities are subject to a metric that permits mathematical calculations. Thus, up to some limit, they permit virtually exact predictions that are common to different individuals.

Economic theorists have often overlooked how general theorems apply within the states of actual economic systems, a problem that became abundantly clear in 2007. They should have recognized that the application of economic theorems to particular transactions in a perfect market was a very bad analogy for the impact of initial conditions on the *state* of the economic system of 2007. Because the transactions of the big financial institutions in 2007 were not related, that is, engineered, to the feedback loops and the types and numbers of actors in the economic system of 2007, analogies that worked for individual transactions in a perfect market did not apply to the actual system.

We have no good systems theories of how the world economy is operating contemporaneously. Completely decentralized decision-making is likely to be as destructive as the Soviet style of economy. I do not know enough about the global economic system to have anything intelligent to say. However, as a first step, I will stress what a systems theory is and how it differs from the general style of theory that applies to mechanics.

General theories do not mention the objects to which the theories apply. Their theorems deal with the relationships among the qualities of objects. Systems theories, whether, for instance, of solar systems or of family systems, on the other hand, do mention objects, *whether or not* the objects are agents. Therefore, those characteristics, such as size, and so on, that are intrinsic to regularities among the relationships of the objects to which the system applies, are incorporated in the theory by appropriate designations. The application of theory involves a pragmatic move in which initial conditions qualify the regularities of the theory. As the first chapter of *System and Process,* 'The Analysis of Systems of Action', makes clear (Kaplan 1957), systems theories specify the equilibrium conditions of empirical bodies the elements of which manifest 'regularities of action' in their relationships.

Different sets of relationships are constituents of different theories. Kepler's theory applies to those regularities in the relationships of the sun and its planets that differentiate it from other possible solar systems. It is a systems theory. It applies to the solar system and not to different types of systems of suns, planets, and satellites. Because Newton's general theory permits common measures, transitions in the paths of solar bodies can be calculated but at the price of the loss of generality with respect to differences of behaviors between solar systems.

My 'balance of power'[1] and loose bipolar theories differ in their characteristic behaviors. They are systems theories. They are not derivable from or even consistent with a general theory because there are no common measures or designations for their elements. Applications of the theories, like the application of general theories, require state descriptions of those initial conditions that have not been incorporated in the theory because incorporating them would reduce theory to an unlimited assembly of unrelated propositions. Theory in that case no longer would have a corporate character that would provide a focus for inferences. These matters will be reconsidered in Part III on systems.

Utility theory

Despite the magisterial efforts of John von Neumann, utiles cannot be measured in a common fashion. When utiles are used in types of games,

the numbers may be useful if it is possible to judge whether the real world is more or less like the game. Because both game and bargaining theories are subject to different solutions – even for the same type of game and the same utile numbers – depending upon attitude toward risk, there is no such thing as a unique rule that is universally applicable among individuals even if a *particular* rule for distribution may produce a unique solution. The relevant actors still may disagree over which rule for distribution should be applied if their attitudes toward risk are different.

Furthermore, it is important to pay attention to what the actors are trying to optimize. In the essay on a multi-stable system of justice (Chapter 3) I show why preferences involve not an optimization of a particular type of output but an optimization *of a range of outputs*. Actors who ignore this – like the fabled king who wanted to maximize his possession of gold and discovered that his daughter had been transformed into inanimate gold – will suffer the penalty of monomania. Apart from the critical formal mistakes of John Rawls's (1971) theory of justice, which are discussed in the next two chapters, both his original and his revised theories ignore the extent to which the optimization of a mix of desiderata, whether individual or social, lies at the heart of the issue of justice.

Language games and theory

Wittgenstein provides the most powerful argument for a position that rests on language games in which ideographic distinctions play the key role. The following discussion will show why this position is mistaken. Thus, it goes beyond the critiques of Wittgenstein's aphorisms in my *Review of Metaphysics* article (see Chapter 2) and beyond the even more extensive critiques in the chapter on language games in *Science, Language, and the Human Condition* (Kaplan 1989[1984]).

Although the positions of Gottlob Frege and Ludwig Wittgenstein are not identical, they share an approach to language in which an object can have a plurality of senses. Perhaps Wittgenstein thought that if language games were substituted for theories, the multifarious contexts that change the senses of objects could be taken into account while 'family relationships' (one-to-many) among types of systems could be substituted for theories (one-to-one). Frege's position is central to the substitution of maxims for theories by ordinary language philosophers. I will provide a detailed rejoinder to that position in Chapter 8. Frege's position also is critical to the thesis of realism in international theory, which I shall critique in Chapter 9.

I now turn to Frege's claim that objects have a multitude of senses. This will permit me explicitly to focus on a crucial mistake that Frege, and also Wittgenstein, made in substituting language games for theories. This is crucial to my showing that analytical theories are a critical aspect of scientific analysis. I will show that it is the complementarity between the analytical and the ideographic that produces evolution in theories and in world views.

In his well-known example, Frege said that Venus, the morning star, and the evening star have the same referent but three different senses. Consider that example more closely. 'Morning star' refers a concept (bright moving body in the sky), denoted by 'star', to a referent that appears in the sky in a particular location in the morning. 'Evening star' has a contrasting reference. The second planet in the solar system is the concept which has Venus as a referent. Thus, the objects, that is, the referents, that are produced hypothetically by the application of three different concepts to the world are different in the three cases.

If the concept is of a system of sun and planets, then any system that fits the concept is a potential referent. From this standpoint, there is a many-to-one relationship. If the concept is applied to the system within which the earth circulates (ideographic), then there is a one-to-one relationship between theory and this referent. Frege makes use of the theory (nomothetic) that places Venus in the morning sky at some times to misidentify it as a referent of 'morning star'. Venus is not a referent of 'morning star' because 'second planet in the solar system' is not the concept that is being applied here.

Analytical one-to-one relationships are required for the possession and communication of ideographic information. Saul Kripke (1963, 1972) and Hilary Putnam (1975) correctly understood that analytics cannot be dispensed with. Indeed, naming immediately introduces the analytical. Naming is a foundation for logic in the form of names and of mathematics in the form of numbers. It is not possible to speak of the relationships of named objects or of numbers in the absence of such provisionally unchanging symbols.

That is likely why Kripke and Putnam defended their thesis of rigid designation on the ground of what they called 'metaphysical necessity'. Because Gödel's proof did not apply to logical systems, their thesis of rigid designation likely was designed to avoid Quine's thesis in his marvelous 'The Two Dogmas of Empiricism'.

When Carnap published his monumental *The Logical Structures of the World* (1967[1928]), he was well aware that incoming information is interpreted. His book nonetheless attempted to validate the concept of

designations that do not vary with the boundary conditions of theories. However, as Morris Cohen noted, if one adds 'a' to 'a' to get '2a', it is only by fiat that the a's are identical. Quine systematically undermined Carnap's defense of designations that apply to theories regardless of boundary conditions in his 'Two Dogmas'. And, for reasons given in Chapter 4, a formalist theory of mathematics cannot be defended successfully. As in the case of 'heads of animals', the axiom set that is relevant to a particular problem cannot be determined in the absence of an inquiry into the ideographic aspects in a contemporary world view.

Kripke and Putnam could no more establish than did Carnap that a designation can apply to a theory regardless of boundary conditions. Thus, it is not surprising that every example of rigid designation that they offered failed and that they were never able to specify how a successful proof could be carried out. Their error was the converse of Wittgenstein's. Wittgenstein removed ideographics from the analytical frameworks that permit relating names to other names. Kripke and Putnam removed analytics from the ideographic frameworks that make analytics applicable to particular types of named objects.

Transcending the postmodern paradigm

I will now illustrate how useful theories apply analytics dialectically while avoiding language games and the non-univocal uses of ordinary language. If Galileo had sought a potentially exhaustive (one-to-many) compendium of ordinary language uses (senses) with respect to moving objects, he would have built a list that included, among many others, 'feathers float' and 'rocks fall'. Galileo was able to invent his theorems because he was searching not for a language game but for names that function in an analysis. His rules of relationship behavior made it possible for initial conditions (ideographic) to be used in a deduction.

If Lewis Morgan's study of American Indian family systems (Morgan 1997[1871]) had started with a compendium of, for instance, mother/child relationships under a variety of contexts, he would have been left with as directionless a list as that suggested for Galileo in the former paragraph. If that is what he had done, he would not have become one of the founders of modern cultural anthropology. Morgan was searching for a theory in which determinate relations among the elements of family systems are consistent with equilibrium. He discovered that more than one type of social system is consistent with equilibrium.

In the Tokugawa system, honor required a Samurai to lie to protect his lord. In the American system, honor requires a teacher to honestly

grade a student he loves, even if this requires him to fail the student. The two concepts of honor share a category. Their implications are radically different and cannot be understood except in relationship to the corporate (nomothetic) characters of the respective systems. Honor may be important in both systems but what honor is differs with each system.

Theory depends upon the adaptation of language to the corporate relationships it explores. That is why, for instance, I distinguished between bloc members and bloc leaders in my theory of a loose bipolar system, whereas Waltz thought that all names are constants.

Cox's advice to pay more attention to history rests upon the way in which he thinks ordinary language can be used. He failed to distinguish between the types of questions that are posed and their relationships to relevant systems. For instance, if one is asking why a particular marriage occurred in a Near Eastern country, one needs to choose between two different modes of inquiry depending on what type of question one is asking. If one is asking why a particular groom was chosen, the relationships between the families in their circumstances likely take priority. History would be central to this analysis. However, if one is asking why the *parents decide* whom the daughter marries, one must look to the character of the system. History, although not irrelevant, is peripheral.

Similar issues arise also in physics. Thus, occasional advances in physics cannot be understood apart from, for instance, the use of new and more powerful instruments that reveal new types of objects. In this sense, an understanding of history is relevant to understanding why science embarked on a particular path. However, this history would not be relevant to particular applications of new theories.

Even in physics, for reasons given previously, general theories cannot be used to *directly* derive the characteristics of particular types of empirical systems. Thus, even though a general theory is involved, the study of empirical solar systems is complex and comparative. With respect to those social systems in which neither common measures nor fungible units are available, comparative theory, where possible, is key to analysis.

Like the assignment of names through the linking of concepts to referents, the formulation of comparative theories rests on judgments related to the general realm of knowledge. Assessments of Galileo's theory, for instance, depend upon the use of elements at least partly independent of his theory such as inclined planes, clocks, and measuring rods. Assessments of Morgan's theories are related to elements at least partly external to the theory such as gender, age, cultural standards, and so on. It is the density of interconnections – both direct and

indirect – and their fit, which underlies hypothetical judgments of truth. (This is why Michael Scriven (1959a) is simply wrong when he says that analytical theories cannot account for particularities. In fact, as I show in Chapter 8, they account for particularities far, far better than do the maxims Scriven advocates.)

Changes in boundary conditions – that is, inputs that serve as step functions – produce dialectical changes in the corporate relationships between sense and reference. This leads to evolution in the designations of the elements of theories and in the use of names. *That is why every analysis including this one is subject to evolution.*

Should the concept of gender (ideographic) change appreciably as a result of genetic inquiries (nomothetic), this newly-understood boundary condition may produce a transforming evolution in sociological concepts, in the structure of theories, in moral understandings, and in their relationships to boundary conditions. Thus, although ideographic considerations enter into judgments, choices from among theories can be understood *only if* their nomothetic aspects are taken into account. Like other evolutionary changes, those related to genetic features of life may be stabilizing or destabilizing. Whether these evolutionary changes are desirable or undesirable sometimes may only be understood, if at all, only after it is too late to influence them. This suggests caution with respect to the use of theory in producing change.

The correlative roles of the ideographic and the nomothetic are central to the understanding of how theories or propositions can be validated, falsified, or transformed. That is why one-to-one relationships (nomothetic), and not language games, are central to taking contexts (ideographic), whether initial or boundary, into account. The relevancy of a particular context depends on the state of theory. And the success of a theory depends on the boundary conditions that are relevant to inquiry. This is not circular. It is part of an evolutionary process of inquiry that produces tentatively common worlds on the basis of a common contemporary framework of knowledge.

Thus, the thesis of Stephen Pepper (1942) that the danda, that is, the interpretive elements of a world view, determine the data ignores the dialectical interchange between danda and data. He took the state of a system of interpretation as definitive whereas any world view, like any physical system, is in process. In physics the meaning of mass in relativity physics is different from the meaning of mass in Newtonian physics. This evolutionary change is supported by an enormous amount of experimental evidence. It refutes Pepper's thesis, and also that of Thomas Kuhn, that the danda of a theory determine the data to which

it is applied. Boundary conditions that limit the scope of a theory are *not* part of the axiomatic account of a theory.

More importantly, the use of names, and hence of theories, cannot be understood apart from a partial or world view. In Newton's theory, 'm' stands for 'mass'. However, what mass is cannot be understood apart from the instruments used to measure it and examples of use of the concept in different domains and different settings. As the understanding of the concept of mass changes with knowledge of other elements, understanding of the theory also evolves. Thus, as I attempted to show earlier in this chapter, there are dialectical shifts in meaning. And, as I will attempt to show in Chapter 4, no theory is self-contained and no object is such as such. As a consequence, Carnap's positivist thesis and Wittgenstein's language games are opposed examples of what Quine correctly called empiricist dogmas, even though I regard well-chosen dogmas as intrinsic to the development of science.

This has consequences for the meaning of realism which I will attempt to clarify in Chapters 6, 8, and 9.

Addendum: the dialectical linkage between theory and description[2]

Identification is not a simple process. The items that are enumerated for purposes of identification depend upon recognition. Thus a dentist recognizes the dental work in the mouth of a deceased. Fingerprint patterns or voiceprints are asserted to be identical. In this way, we eventually identify a man as a particular man. On the other hand, is a robot a man? Suppose that like Commander Data in *Star Trek: The Next Generation* it is capable of abstract thought and of moral behavior.

What are the points of identification that justify us in categorizing a particular observation? These points of identification are not matters of simple recognition. They may depend upon the relationship of the observations to a theoretical framework within which they receive interpretation. At least in the physical sciences, there are usually theoretical checks on whether ideographic identifications are plausible. Consider, for instance, the problems that Irving Langmuir had with the Davis–Barnes experiment: 'Well, in the discussion, we questioned how, experimentally, you could examine the whole spectrum; because each count, you see, takes a long time. There was a long series of alpha particle counts, that took two minutes at a time and you had to do it ten or fifteen times and you had to adjust the voltage to a hundredth of a volt. If you have to go through steps of a hundredth of a volt each and to cover all the range from 330 up to 900 volts, you'd have quite

a job. [Laughter] Well, they said that they didn't do it quite that way. They had found (them) by some preliminary work that they did check with the Bohr orbit velocities so they knew where to look for them. They found them sometimes not exactly where they expected them but they explored around in that neighborhood and the result was that they got them with extraordinary precision. So high, in fact, that they were sure they'd be able to check the Rydberg constant more accurately than it can be done by studying the hydrogen spectrum, which is something like one in the 10 to the eighth power. At any rate, they had no inhibitions at all as to the accuracy which could be obtained by this method especially since they were measuring these voltages within a hundredth of a volt. Anybody who looks at the setup would be a little doubtful about whether the electrons had velocities that were fixed and definite within 1/100 of a volt because this is not exactly a homogeneous field. The distance was only about 5 mm in which they were moving along together' (Langmuir 1968, pp. 2, 3).

The properties at issue were defined by physical theory – not merely by simple observation – and the supposed identifications were unlikely according to a specific accepted theory, Bohr's theory of the hydrogen atom. Thus Langmuir was led by theoretical considerations to a rejection of observational identifications that had been made by Davis and Barnes and to an explanation of their mistake. In other cases, observational identifications will lead to the rejection of theories. Both processes investigate complementarities.

2

Human Reason and a Common World View: Why Wittgenstein and Rawls are Both Wrong[1]

Science and technology preceded the great period of Greek philosophy. However, in a unique development in intellectual history, Socrates, Plato, and Aristotle sought a reasoned understanding of the world – that is, a mutually understandable account of the world, of things in it, and of relationships among them – based upon a synoptic understanding of the science of their age. Key elements of the accounts of the three philosophers depended upon identity, an invariant relationship between concepts and at least some elements of the world.

Early modernity embraced an identity between concepts and referents to a much greater degree than did the Greek paradigm. In the late nineteenth century, such identities were called into serious question by anthropological research. For instance, Lewis Morgan, who studied the language uses of American Indian tribes, discovered that a mother in a particular tribe was any female in a particular age cohort with respect to any child in a particular age cohort without respect to direct biological descent. He explored the differences in systems of consanguinity, that is, family systems, and the factors that supported these differences.

In the twentieth century the concept of common understanding came under strong philosophical attack. Stephen Pepper argued that it was not possible to choose from among competing philosophical positions because the danda, that is, the interpretive framework, determined the data. Thomas Kuhn (1962) applied a similar argument to competing scientific theories. Ludwig Wittgenstein used the analysis of language games in a way that at least appeared to share some aspects of their positions.

The decision of Jürgen Habermas (1973) to emphasize consensus over the analysis of evidence may have rested on a related ground. However,

as shown in the first chapter, the belief that the danda determine the data ignores the complementary relationship between analytical or nomothetic and ideographic correlatives. For any given state of knowledge, that is, for any world view, the analyst employs analogies that are justified by a contemporary evaluation of the fit and density of knowledge in which the relations of data and danda vary with boundary conditions. Later, in this essay, the Cargo Cult and the Fátima hypothesis will be examined from this point of view.

There is a position that restores the meaningful character of common knowledge. A transactional approach to knowledge – albeit one in which the concept of objective truth, at least in an analogical sense, is meaningful – and Aristotle's recognition that method needs to be adapted to subject matter provide the keys. This approach shows that deduction works only within boundary conditions in which measures are common, that is, cardinal, and designations common. As I shall attempt to show, this occurs only imperfectly even in physics, and so imperfectly in morals and politics that Aristotle's category of judgment, rather than deduction, applies.

Names lie at the foundation of analytics. However, as I argued in the first chapter, names relate concepts to referents. Thus, the meanings of names depend on their uses. Although I reject an identity between concepts and referents, I believe that humans can achieve a common world view about theories, hypotheses, and moral choices if divergent frames of reference are taken into account and if they possess a common body of information. Thus, I accept the Greek goal of a common reasoned understanding of objective nature while recognizing that the characterization of an object is related to the characters of transceivers in their settings and the contemporary state of knowledge.

This chapter begins by showing the centrality of fit to interpretive judgment in a world in which names, that is, designations, have different, and sometimes radically different, meanings. This leads into an examination and rejection of an identity between concepts and referents. An analysis of transactions will show why their products are objective even though, when considered individually, they may seem to say different things. Discussion of the Rosetta stone will show why density of information is crucial in the effort to arrive at judgments that rest on differences in how names link concepts to referents. An exploration of Wittgenstein's language games approach will show that it employs a form of dialogical argument that obscures what the dialectical form of inquiry outlined in Chapter 1 would reveal. This perspective will be used to show why Rawls's (1971) theory of justice is untenable and why the procedures of chapter 3 are preferable.

The process of assigning concepts to referents

Meanings that arise out of sensory inputs are transactional. Consider a radio station. It does not propagate words but only radio waves, which eventually are transformed into words by instruments and minds. Experiments show that when transmissions are partly garbled by noise, the mind uses expectations to fill in the gaps. Thus, for instance, as experiments show, if one ascribes a term such as father to a referent, the mind will fill in physical features that were not originally apparent. This is one source of false identifications. That is why identifications are part of a process of mutual (dialectical) adjustments between the *intentions* of an inquirer and their *pragmatic extension* to the world.

For instance, if 'eye' is heard, the mind must discern whether the reference is to a self, to the center of a storm, to a needle, or to an instrument of vision, each of which has a number of associated concepts that are not intimately related to each other. Other words in the sequence permit discerning what is meant by the sentence. The reasoning with respect to 'eye' is *not deductive, but based on fit* with other elements. If the words 'high winds' and 'rain' appear in the sequence, eye of a storm is inferred. The sentence gives meaning to the word. If, on the other hand, one hears 'shutter speed', one thinks of a camera and the two words assist in discerning the meaning of the sentence.

Thus, it is not possible to know the intended referent of a name within a sentence, or to understand how names apply in different contexts, without referring to a panoply of meanings that do not depend upon the sentence. Even a simple sentence requires information external to the sentence if it is to be understood as intended.

Each element of the analysis involves information that is related to categories employed by a mind. If each were deduced from other elements, as the paradigm theory of Stephen Pepper asserts, this indeed would be circular. If, on the other hand, the analysis rests upon a fit among partly independent elements of knowledge, as in the examples in the prior paragraph, it instead suggests a non-circular method of reasoning analogous to what Aristotle called judgment. *It is the fit and density of information among the many partly independent elements of a world view that allows a judgment of truth to be applied to a hypothesis.*

It is judgment that permits the analyst, in principle at least, to do what Wittgenstein, Pepper, and Kuhn, for instance, appear to deny: to judge the analytical elements of world views and partial world views from the standpoint of the interpretation of ideographic observations, that is, of data. Correspondingly, the interpretation of data is judged

from the standpoint of danda. This invokes the dialectical relationships between correlatives, in this case, the ideographic and the nomothetic or analytical. The density of the information that is available is crucial to these judgments.

Testing the identity thesis

The preceding analysis that posits a dialectical foundation for human knowledge has serious limitations if the thesis of a universal connection between names and things is advanced. The most recent attempt to resurrect that thesis, the Kripke/Putnam rigid designation thesis, which posited a rigid, that is, a universal, connection between names and referents in all possible worlds has been convincingly rebutted (see Chapter 4).[2]

However, the Kripke/Putnam thesis may not provide a good test of the Aristotelian position. It is general while Aristotle's thesis, unlike many early modern positions, was limited. In Aristotle's system, identity applied only to units, that is, to a non-divisible one as contrasted with a divisible many. Aristotle considered objects other than units to be composite and he applied a more qualified sense of 'true' to them. How correlatives are understood is central to this thesis.

Correlatives, as I use the concept (Kaplan 1989[1984], pp. 51–61; see also the first chapter in this book) are axes of transactional meaning. They do not have philosophical independence, as they do in Aristotle's system. The axis, or category, creates meaning by contrasting objects of experience. Thus, something may be light with respect to one thing and dark with respect to another. Something may be a unit from one perspective and a plurality from another. The self, even the mind, is a plurality when considering the subprocesses within it, and a unit as the home of the subprocesses. By contrast, it is the philosophical independence of the polar terms in Aristotle's system that sustains his treatment of units. The dialectical interrelationships of correlative pairs, as revealed by dense analysis, sustains the position taken in this chapter in which neither of the polar terms of correlatives is identical with a referent.

Therefore, a critique of Aristotle's position on identity must cope with his understanding of what characterizes units and what distinguishes them from composite objects. If Aristotle's case can be made, one can argue for the permanence of units, for their essence will never change. His solution lay in an apparent demonstration that some objects had a unique irreducible set of qualities that distinguish them from a many. Some neo-Aristotelians believe that they can find examples in the post-

Aristotelian world that meet this test. For instance, a line is a continuum. The end of a line is a point and it is indivisible. Thus, it is an Aristotelian unit, an indivisible, a one as distinguished from a many. It is identical with its referent.

However, as contemporary science reveals, the end of an actual line is not an Aristotelian unit or point. The end of an actual line will have *apparently* precise delineation only if an instrument is used that cannot detect molecular motion. Because no molecular motion is identical to another, examples of the concept are such *analogically*. Moreover, a claim of molecular motion invokes a judgment that is not independent of the context in which it is used.[3]

It does not support the Aristotelian position with respect to an end of a line to move to the formal concept of an end of line. This can be understood only by the correlative contrasts between line and segment, and divisible and indivisible. These can be understood only through contrasting examples. For example, consider a large point. Then one can imagine reducing it in size until it can be reduced no more, at which terminus it is indivisible. In any state of technology, there may in fact be a limit. However, as a mental procedure, it no more has a termination than does the injunction to continue positing integers until one has an infinite set. In the absence of examples, the words alone do not convey meaning. If examples are employed, one is in the realm of the non-identical, for they are judged by contrast.[4]

Aristotle's concept of judgment rather than his method for determining a unit applies to choice of category, that is, of designation. For instance, Aristotle defined a human as a rational animal. Carnap pointed out that 'featherless biped' would meet Aristotle's account of unit. This showed that neither met Aristotle's standard since a unit needed to be unique to serve its ontological aim in Aristotle's canon. Thus, the concept of what is human also involves a judgment that is not independent of boundary conditions and the concepts relevant to them. Such a judgment would rule out featherless biped, although it would not instantiate rational animal as a unit.

Human natures are not identical with each other but vary with DNA, natural development, and sociological contexts. On the other hand, some of the overlapping aspects of human nature may be judged more important than others from a more inclusive range of knowledge because of the dense way in which they are related to each other. The judicial hearing in *Star Trek: The Next Generation*, in which the issue was whether the cyborg Commander Data was human, was an exercise in reasonable judgment. The judges explored his behavior and judgments

in a variety of situations and compared them to those of biological humans. The issue was not whether Data's humanity was identical to that of the other officers but the extent to which it should be considered sufficiently similar for legal and moral purposes. Compared with biological humans, Data scored close to the top of the scale of what is human (I leave unexplored whether non-biological systems are in fact capable of the emotions, or of motives including intellectual ones, that sustain caring for others). Boundary conditions and frames of reference, thus, are related to the elements that are included in the understandings of concepts such as 'human'. Judgment, which invokes closely related elements of knowledge, is used. But there is no absolute identity, only a conditional one.

This position rejects a concept of essence in the absence of which the Aristotelian concept of necessary truth, the concept Carnap attempted to restore with his thesis of logical positivism, cannot be supported. Chapters 4, 5, and 6 will show how a concept of truth, although not of necessary truth, can be used with respect to theory. They will show how analytical systems composed of names and numbers can be used to guide inquiries. This is one reason why our understanding of what is true evolves dialectically.

Early modernity and theory

Before turning to an examination of how judgment discloses objective features of a common world, a discussion of theory in modern physics will help to clarify the implications of this position. This discussion will disentangle the procedures of modern science from the interpretation that early modernity put on it (for instance, Newtonian theory) – an interpretation that is still accepted by many physicists who consider the truths of physics to be necessarily true.

The aspect of theory in physics that is unlike theory in many other sciences and that makes it appear to be necessarily true, is that common measures and common designations appear to be uniformly available, a thesis that will be called into question in Chapter 4. The early modern version of strictly deductive theory permitted experiments in which common measures took the place of Aristotelian true definitions or units. The measures applied to qualities were believed to be ontologically identical with the magnitude of qualities and, therefore, universally applicable in deductions that employed the theorems of mechanics.

It likely was the great success of Newtonian theory (and also of the non-syllogistic Port Royal logics) that led to the overextension of deductive

theory, for it seemed to suggest that the limitations on deductive theory in classical analysis were the products of the syllogistic form of theory. However, we now know that common measures are elusive outside of physics, and that restrictions of application apply within physics even when common measures are available. For instance, the meanings of terms used in theories (mass, for instance) differ with the theories that employ them.

The best-known example of the absence of necessary truth in classical mechanics is provided by the clock paradox of relativity physics. Observers on independent inertial systems will each assert that time lengths on the other systems are longer, and they will agree that each will be correct. Thus, the inertial system is a frame of reference that is central to the scope of application of relativity theory.

Some problems that arise in quantum physics, where the 'laws' and their contexts of application differ from those of classical mechanics, are even more profound. If some types of experimental instruments are used to explore phenomena (such as light), what seem to be wave characteristics emerge. If other types are used, what seem to be particle characteristics emerge.

This led many physicists to argue that the 'objects' in question are both waves and particles before an experiment. However, there is no evidence to support this and these objects have particle-like or wave-like existence only in transactions. John Wheeler thought the notations of quantum theory were identical with the nature of their referents. Because the theorems of quantum theory are probabilistic and because only one of the possible probabilities emerges in any test (the 'collapse of the wave function'), he was led to his 'many worlds' hypothesis, for which there is not, and most likely cannot be, independent evidence.[5] *The underlying mistake, however, lay in his treating the names used in quantum mechanical theories as referents*.

An even deeper challenge appeared with entangled photons. The Einstein–Podolsky–Rosen thought experiment showed that if quantum theory is correct, entangled photons would coordinate their polarizations at up to infinite distances instantly. Einstein believed this was so ridiculous that he thought it disproved quantum theory. And it led him to doubt that he knew what he meant by simultaneity. Yet increasingly rigorous experiments support the predicted result. The results of the tests of entangled photons, thus, seemed inconsistent with the space/time character of physical theory. However, space and time are notational categories that permit studying relations among things. The concepts of 'instantly' and 'up to an infinite distance' that are relevant

to the inertial system of the experimenter are not relevant to the path of the entangled photons. They are names that connect concepts to things, not themselves independent things. Thus, the problem Einstein perceived resulted from his failure to distinguish between relevant *frames of reference*.

No theory, and no analytical paradigm, as far as is known, is ever true in the Aristotelian form of a necessary truth in which it is identical with the referential world. No theory can be proved true in the Aristotelian sense. And the standard theory of physics will not be proved true in this sense, not even if the existence of the Higgs particle is verified experimentally. When the evidence supports it, as after Galileo's experiments with inclined planes, a shift in the use of theories and in the designations of objects and concepts could occur. It is the fit and density of knowledge that makes this shift and a consequent claim of truth for the new paradigm meaningful. This applies both to theories of confirmation and of falsification. There is no such thing as a confirmation or a falsification that is true as such.[6] (Indeed, the apparent proof that the Higgs boson exists is really a judgment that the result is a false positive only with a vanishingly low probability.)

Transactions and truth

If one means by objective truth a relationship of identity between concepts and things or processes, then there are no objective truths. However, this flies in the face of experience with transactional products. As Hegel recognized, objects are transactional products that minds produce. They are not instances of an essence. Theories permit us to find the regularities that attend the objects minds produce in their transactions with the world.

Thus, it is objectively true that time lengths are longer on independent inertial systems other than on one's own, even though this judgment does not yield a necessary truth. The measurements of particles coming from outer space show that they decay at a slower rate than those originating on Earth, just as the theory predicts. In this case, the transactions are relative to placement on an inertial system. It was true, as Lewis Morgan discovered, that in one Indian tribe a mother was any female in an appropriate age cohort with respect to all children in a specified age cohort regardless of direct biological descent. A green ball is objectively such for any average human in sunlight.

Even most philosophers who stress interpretation can hardly deny that the former examples are true in a meaningful sense. So why do

some of these philosophers argue that interpretation is inconsistent with objectivity? Their mistake is to fail to recognize that the operations of mind constitute a boundary condition for experience.

The transactions of minds, like transactions with clocks, create objective products. The atomic clock in Boulder measures time by shorter intervals than my watch. It would not be useful to say that one is true and the other false. Each measurement is true, that is, useful from its instrumental context: the mechanism employed in the measurement. It is also true that my watch will become inaccurate over a very long period of time. If a wristwatch has begun running fast, it will be judged to show an increasing discrepancy with the lengths of days. As this will not fit any other stream of data, the utility of that wristwatch for standard purposes will become questionable. In loose terms, one would judge the watch to keep poor time. That is the sense, albeit a less than universal one, in which the claim is objectively true.

If one investigates mind as a transactional context, it is possible to specify how different types of neurological systems transact differently with referents. We know that dogs do not have color vision as we do, but that their olfactory apparatus is much more sensitive than that of humans. This is why some courts accept the barkings of trained dogs with respect to inspections for dope.

If reality is regarded as transactional – and this accords with the evidence – then the concepts that evolve in an infinity of possible transactions are not interpretations of a static underlying reality that is beyond knowledge, but objective products of actual or potential transactions that shed objective light on each other. Claims about them are judged by how the transactions of minds fit with other transactional aspects of knowledge.

For instance, suppose someone says that a red object is green. If one gives such a person a color test, it likely will be discovered that the person is color-blind. Close examination likely will show that his optic apparatus differs from the standard human one. It is objectively true that the object is green for him and red for most of us. The color-normal and color-blind person can agree on who is able to distinguish colors more sensitively and why, thus showing that they share a common, although not identical, world.

How external objects transact with each other and with minds is subject to interpretation. Thus, the green aspect of a transaction by a color-blind person is objective and the account of how and why this product is produced is interpretational and tentative. The denser the knowledge that enters into the interpretation, the greater the confidence that can be placed in it as an analogy.

Speculative reason can imagine perceiving selves different from ours. For instance, a self that cannot perceive an object unless it is present for thirty years in human terms could not perceive Schrödinger's cat alive or dead. However, the cat is potentially there for such a self if that self can find some method for inferring its existence. Analogously, physicists who cannot directly experience subatomic particles infer their existence from experiments.[7]

Many physicists misinterpret the slit experiments when they assert that whether a wave or particle is produced depends upon observation. As Bohr stated, and *as Max Born repeatedly emphasized*, it is a transaction with an experimental apparatus that produces in human experience a wave-like effect in one case, and a transaction with incompatible instruments that produces a particle-like effect in the other case. Minds do not produce this diversity of effects, even though waves and particles can be experienced only by minds. Filming the tests in the absence of observers and observing the film later would confirm this. Thus, what is objectively the case is a result that recording instruments, whether or not human, can capture.

Even *trompe-l'oeil* transactions are objective because the image that results stems from concentration on particular elements of the drawing. Hallucinations are transactional products that cannot be captured on film and that, unlike the case of the slit experiments, do not exist independently of a *particular* perceiver's mental processes. Analysis reveals the factors external to the self that a non-hallucinating individual would observe differently, and the factors internal to the self that produce the hallucinations. The former examples reinforce the view that the so-called subjective factor of interpretation is merely a component of a more inclusive analysis of an objective reality. Even one who hallucinates, after recovery, may be able to understand how his past experience misrepresented an external course of events and why others interpreted his hallucinatory claims as mistaken.

Fallible judgments about the correct way to characterize objective aspects of the world are made within the framework of a realm of knowledge, the various parts of which assist in judging other parts. For instance, consider the Rosetta stone. If primitive humans had found it, they would not have recognized it as writing. The discoverer of the stone recognized it as writing but could not translate it. Eventually, with the expansion of knowledge in which a more complex schema allowed an understanding of more complex relationships, it was translated. In this latter phase of knowledge, one could know why primitive humans could not recognize writing, why the discoverer of the stone could recognize writing but not translate it, and why it could be translated at a later

time. Before writing emerged, it was almost impossible to recognize the marks as writing. When the stone was discovered, it was easy to recognize writing but the cognate information that would be needed for translation was not yet available.

Thus, when a claim is made that a theory is superior to an alternative theory, this claim rests on the *density and fit of evidence within the framework of a world view*. The former account of the Rosetta stone shows the relationships among part systems in a way that alternative accounts cannot match. The account is not true in Aristotle's sense of necessary truth. But it has clear pragmatic superiority. What we mean when we say that it is true is that it is a *good analogy* that is densely supported by our world of experience.

If one means by 'objective' a characterized state of affairs that will be similarly but not identically reproduced in similar contexts, including the state of knowledge of individuals of their world and of the character of their selves, then the judgments about the correct ways in which to characterize the intensional and extensional features of the world, at least for humans, are such objectively, that is, commonly, but fallibly. The intensional and extensional applications of concepts evolve as the complex interplay between a global synoptic system of knowledge composed of partly independent part systems, and of particular objective products is judged.[8]

There is an important second sense in which the world is common. As in the case of the Rosetta stone, we often will have enough dense information to understand why some interpret aspects of the world differently from us and why their interpretations may be inferior. In other cases, we may be able to understand why some have better knowledge than we do in certain areas and why their interpretations may be better than ours.

Some whose interpretations are based on a much less dense realm of knowledge than ours, analogously to a primitive man's discovery of a Rosetta stone, may think they have a world view as valid as ours while we know that what they regard as truth is a bad analogy, that is, that it has a *bad fit* with the evidence we possess. Others may be predisposed to a dogmatism that forecloses inquiry. However, in principle, common world views, at least for humans whose faculties, capabilities, and access to information are similar to ours, are possible. *Whether sentient beings radically different from humans might interface with the world in such a way that it is not common is a question that I cannot answer.*

There is a sense in which the world is both common and uncommon. In principle, observers on earth and on Alpha Centauri would agree that

Einstein's theorems apply to both their worlds with respect to the measurement of time. Such observers would note based on their respective measurements that time is moving more slowly on the other's system. Therefore, they might disagree with respect to the system on which time is moving more slowly. However, if they properly understood relativity theory, they would also understand that these disagreements arise from differences in their frames of reference, that is, from the framework of the inertial systems on which they are located.

The position presented in this chapter involves epistemology. However, epistemology in turn involves relations between transactors, that is, objects of a kind, and other objects external to transactors. In the case of the Rosetta stone, primitive man could not have recognized the marks as writing. When humans knew about writing, the analysis of internal evidence and clues from other writing systems could be used to decode the marks. In the Cargo Cult case (discussed below), evidence from factory production, mining, and shipbuilding, among other items, casts overwhelming doubt on the interpretation by the Cargo Cultists of what produced the shipments.

Although some elements of knowledge are more closely related to particular judgments than are others, the entire realm of knowledge consists of clusters of more or less closely related elements and of denser and less dense relationships among the elements of knowledge. Although some of the links between elements of a world view may be better supported than others, the entire realm of knowledge is a resource for judgment that does not permit a deductive methodology. Although a world view is not causally determined by human neurology, our neurological system is relevant to our experience of the world. The fact that we can speak with assurance with respect to the Cargo Cult case follows from the dense range of evidence we have that fits closely together in arriving at our judgments.

Wittgenstein

Conflicts in the choice of analogies are not a matter of the 'combat' of which Wittgenstein speaks but of judgments, more or less reliable, of analogies for the ontology of the world. In this sense, *judgments cannot be validated by sociological placement* although they may be influenced by it.

Thus, observers on different inertial systems may agree that time lengths are longer on the other's system. And they may agree that what is just in that system is not just in ours and vice versa. But these

judgments are in principle common and do not testify to the 'combat' of which Wittgenstein speaks. However, can such judgments produce combat when they involve conflicts of interest? That subject will be explored in the next chapter. I will lead up to that discussion in the remainder of this chapter.

Consider Wittgenstein's aphorism: '"I" is not the name of a person, nor "here" of a place, and "this" is not a name. But they are connected with names. Names are explained by means of them. It is also true that it is characteristic of physics not to use these words' (Wittgenstein 1958, p. 116e). The 'I' is a framework of reference. In anthropology the framework of reference, that is, the tribe, is crucial to Morgan's claim that in one Indian tribe 'mother' did not necessarily invoke direct biological descent. In physics, time lines are relative to inertial frames of reference.

The choice of relativity theory over Newtonian theory hinged on the ability of the former to account more completely and with greater precision for the phenomena to which the two theories applied within the contemporary framework of knowledge. Although there were differences in the meanings of some key concepts (mass, for instance) and in the equations or grammars of the systems, the decisions that led to the recognition of relativity theory as true were determined by tests, the results of which were not independently determined by language games, differences between the theories, the uses of the instruments involved in the tests, or the social systems of which the scientists were members.

Morgan's systems of consanguinity do have 'family' resemblances as do the theories of Newtonian and relativity physics. However, in Morgan's study the adequacy of the accounts of the factors that led to the differences in the systems and the ways in which they satisfy a range of social needs are at issue. Truth applies to accounts of types of systems and it is not the case that if the account of one is true, those of the others must be false.

Systems theories are not like Wittgenstein's families of language games. As in the case of physics, information outside of the so-called games, that is, of the theories, is required to assess judgments of truth. In physics, the measurement of whether light bends around a gravitational field is not determined by which theory, or language game, is being used. In sociology, whether support has been maintained or the requisites of life acquired are not determined by the theory of a system even though adherence to a theory may affect results. In other words, part systems not directly included in the central theories or language games are used in the assessments of fact. It is the fit of evidence and not a

unique account of confirmation or falsification or a language game that is involved in judgments of truth.

Wittgenstein, however, at least seems to suggest that a different framework of understanding applies. Suppose 'instead of the physicist', Wittgenstein wrote, 'they consult an oracle. Is it wrong for them to consult an oracle and be guided by it? – If we call this "wrong" aren't we using our language-game as a base from which to *combat* theirs?' (Wittgenstein 1969, p. 80e [emphasis in original]).

Would one consult an oracle to determine when a spacecraft will pass a planet? Would one consult a physicist to ask whether my birth date falls on a lucky day? We have good reasons to ask a physicist about the path of the spacecraft. On the other hand, the fit and density of evidence provide strong reasons to believe that astrology may be far less than an exact science with respect to the lucky quality of my birth date. A suggestion that one not consult an oracle or a physicist to answer the second question would reflect the irrelevance of these disciplines in the contemporary framework of knowledge. To suggest a physicist with respect to the first question is not to engage in combat with an alternative language game but to make a reasoned pragmatic choice on the basis of a *contemporary* world view.

Wittgenstein's aphorism conflates issues that need separation. Is there a universal theoretical approach such that one must choose between physics and oracular knowledge? Why not between physics and biology or psychology? Even if one chooses a subject matter to which a particular case is relevant, why assume that a general theory for that area is appropriate? In any event, even if that aphorism was only a stage in a dialogical inquiry, it does not initiate a productive inquiry.

When a physicist says that time lines are longer on each of two inertial systems than on the other one, a vast array of theory and evidence supports that judgment. However, when a Samurai says it is just to lie to protect his Daimyo, that is not a general truth but a truth of his system, and it is supported by knowledge of that system. An external analyst may prefer his moral system to that of another but, as I will show in Chapter 3, the claim that it is superior depends on a more complex analysis. The missionaries in Chinua Achebe's (1958) *Things Fall Apart* applied a moral outlook that was not relevant to the local inhabitants. To distinguish between those theses that are general and those that apply to particular systems, one must take into account not merely the features that apply to a system, but an evolving world view that permits judgment of more far-reaching questions.

To show that a world view including elements not included in a language game or theory is central not only to choices from among closely related theories but to choices from among entirely different types of theory (or language games), consider two actual historical cases, Fátima and the Cargo Cult, for which scientific or oracular-type explanations are alternatives. Examination of these examples will show that it is the fit and density of evidence within a contemporary world view that leads to a *tentatively* reliable judgment that takes into account evidence that is not reducible to either perspective.

Wittgenstein's distinction between objects and contexts reifies both concepts. This is one reason why Leonard Linsky's thesis (see Chapter 4) that an exhaustive list of facts, even though not available, in principle would determine truth is incorrect.

The belief of some religionists in the events in Portugal associated with the Fátima[9] is not necessarily false. But the physical effects that one would expect a 'dancing' and even 'darting' sun to produce (physics) were not reported anywhere, not even in the local area. Reports of a dancing of the sun that normally would be visible over a wide area were confined, with some exceptions, to observers in relatively local areas. And these reports are subject to possible post facto reconstruction of memories and possibly are derived from hallucinatory experience (psychology). The deaths of the boy and girl likely would be regarded as coincidences (probability theory).

Hence, judgment – which can be applied by both nonbelievers and believers who are willing to reason about evidence – would lead to nonacceptance of Fátima claims in the absence of more convincing evidence to the contrary. Change some of the facts in the Fátima case and the judgment that no miracle is involved will be called into question. Suppose the darting of the sun had been reported in many different countries before the events at Fátima had become known outside of the local area. This would cast serious doubt on arguments that mass hallucinations or retrospective falsifications of memory might explain the observations.

A judgment that an authentic message had been delivered might better fit this evidence than would a judgment that dismissed divine intervention. The deaths of the two children might be coincidental but could not now be dismissed on that basis because the deaths *fit* the other evidence. In the absence of a dense surround of supporting judgments, it would leave open hypotheses about what had happened, including a judgment that God had arranged a miracle. This analysis of Fátima does not disprove divine intervention; it merely shows that divine intervention in the particular case has not been established by convincing evidence in the current realm of knowledge.

These different interpretations are based upon reasoned judgment of the fit and the density of evidence. In the case of the sentence in which 'eye' required interpretation, a reference to shutter speed supported the inference that 'eye' referred to camera. In the Fátima case, it was enough to know that the sequence of events supported the inferences of hallucinations or retrospective falsification in the actual case and would have undermined them in the other in which observations that would violate known laws of physics had been widely shared. On the other hand, had the Fátima example occurred in the thirteenth century, a fit of evidence less dense than that of the contemporary period might have supported the attribution of divine intervention.

The beliefs of members of the Melanesian Cargo Cult – that only God could have provided the huge amounts of material offloaded from ships during World War II – could have been undermined by taking the cult members to the mines from which materials were extracted, the factories that produced the goods, the shipyards that built the ships, and the organizations that planned and carried out the voyages. As in the case of primitive humans and a Rosetta stone, the account of Cargo Cult members of the origin of the shipments was primitive because they had had no access to the dense information that undermined that claim. If they had had that information, at the very least they likely would have concluded that prayer was very unlikely to produce shipments of goods in the absence of a host of other factors.

The discussion of Fátima shows how an investigation would proceed from the standpoint of a contemporary world view. In the case of the Cargo Cult, the world view of the cult members (including how part systems are related within them and evidence evaluated) must be disentangled if they are to understand what they have observed. This is done by appealing to *part systems* that the cult members share with moderns. This helps to transform their world view.

A brief account of how the cult members could have been shown why their belief that the delivery of goods resulted from prayer was at best insufficient was provided above. This would have shown them why prayer alone almost surely would not have produced the desired result in the actual circumstances.

Contrary to Wittgenstein's thesis, this was not a combat between language games. My skeptical account is a reasoned conclusion related to the *fit and density* of information *within the framework of a world view*. Divine intervention has not been disproved. But the evidence in the particular case is not sufficient to make it a likely hypothesis.

Consider Wittgenstein's aphorism, 'I say of someone else "He seems to believe…" and other people say it of me. Now, why do I *never* say

it of myself…?' (Wittgenstein 1958, p. 191e [my emphasis]). The implicit answer is that one can deceive others but not oneself because one has direct access to one's beliefs. This comes out explicitly during Wittgenstein's discussion of pain (the privacy issue). Wittgenstein's aphorism incorporated a concept of mind that had been invalidated by work in psychology and neurology well before mid-century. Mind is far more complex than the aphorism acknowledged.

When I used to play cards for money, I tried to convince one player that he really wanted to lose, even if he thought he wanted to win, by showing him that he knew that most of his bets went strongly against the odds. My interlocutor eventually came to doubt that he really wanted to win, despite the fact that he had thought he did, as he recursively took into account the same evidence that led to my interpretation. Both he and I then thought there was a deep layer of his mind that 'knew' that he did not want to win and that it was prevented from rising to self-consciousness because losing satisfied some need. He eventually came to believe that he only seemed to believe that he wanted to win. This is at least a plausible, although not a definitive, account of the specific case. Thus, contrary to Wittgenstein, I can say of myself that I seem to believe something.

Consider two other possible examples. A man sees his doctor and tells him that he feels a pain in an arm that has been amputated. The doctor explains how the neurological system produces this result. Two men are walking along a dark path. One says that suddenly he is afraid. The other says that he felt a cold breeze which raised goose bumps. Perhaps this is what the first man has interpreted as fear. In these cases, the information that leads to interpretation is commonly accessible.

Can one feel another's pain? Wittgenstein's language games account of privacy excludes this possibility. However, no language game can exclude it. Processes that employ mirror neurons can simulate the feelings of others. In this sense, it is possible to feel what another feels. This may be at least one source of empathy and of moral concern for others.

In recent experiments a headset was used to translate electrical impulses in a subject's brain into digital signals. This allowed her silently to order a robot to serve her a glass of tea. This suggests that one may be able to transmit to another person information that sets off pains like those that afflict the subject. The pains may not be identical, but then the pain that I feel now may not be identical to the pain I felt thirty seconds ago, even if I think it is identical.

Can something similar occur without an intervening apparatus? I doubt it although claims of one sibling to have learned what happened to a distant sibling sometimes occur. We cannot now establish that such communications cannot occur.

A similar process may set off feelings of empathy for another. Contrary to the empiricist fallacies inherent in Wittgenstein's language games approach, it is the fit and density of evidence from different part systems in all these cases that enables one to frame the relevant questions and to judge answers to them. These will evolve with the state of knowledge. And they are consistent with the forms of theory Wittgenstein rejects.

Because of the complexity of mental processes, it is possible, even if only rarely actual, to know within a dream that one is dreaming and even to edit and rerun a dream. Although there are many problems with both the formulation and application of a contemporary theory of mind, neither Wittgenstein's language games approach nor his aphoristic method provides a useful point of departure for their examination.

Memory also is a complex process. It does not present past events or beliefs in ways that are directly comparable. When one judges that the A's in A=A are the same, one can compare them directly across a number of characteristics. (Hence, they also are not identical.) On the other hand, one cannot directly compare one's belief one moment ago with one's belief now. If this were not subject to independent analysis, then any knowledge of one's beliefs would be so fleetingly transient that it would be almost meaningless to say that one knows what one believes. A critical mind will put parentheses around its beliefs. A critical intelligence will always possess a residue of doubt that it believes what it thinks it believes.

One can know a memory can be false because one can compare it with artifacts. For instance, one remembers that a dance occurred in 1993 but a program and other evidence show that it was held in 1994. It is this process in which ideographic and theoretical interpretations are fitted to each other within different bodies and densities of evidence, *and not the process of language games*, that enables one to form judgments concerning objective truth within the framework of a contemporary world view.

Thus, the concept of truth is meaningful but it is a judgment based upon the evaluation of evidence within a framework of knowledge, that is, of a world view, and not an independent fact. Wittgenstein's language games hypothesis is as much a dogma of empiricism as is Carnap's positivism.

Complementarity and moral analysis

According to what many classicists consider the best interpretation of the Socratic dialogues, they are consistent with contextual limitations. For instance, consider the discussion of whether rule by the stronger or the wiser is appropriate. As in some animal prides where the strongest

male rules, some tribes quite appropriately let the strongest male or the faction with the most available force rule. This may have been the best regime in some contexts, for instance, ones in which protections of related persons against enslavement and theft of food supplies were urgent. However, because these investigations lack density, they tend to be overly general.

Classical accounts in which virtues are critical criteria in moral arguments are also subject to boundary conditions. No society is likely to survive under harsh conditions if its virtues are not incorporated in common practice, for the risks involved in its support are not likely to be assumed in the absence of virtue. Moreover, virtues are essential to a self that has the satisfying integrity that an intelligent person would recognize as desirable.

However, there is no common measure for what a virtue is. The meanings of virtues differ very much from society to society. Honor in Tokugawa Japan (extension) meant giving loyal support to one's superior even if this required dishonesty (intension). In nineteenth-century America, unless one were one of the robber barons, honor required honesty even if this injured one's superior. In Jordan honor sometimes means killing a sister who has been raped.

Both the natural law and natural rights doctrines have fatal defects. Even the natural law to do no harm is too simple. The brother in Jordan who protects his sister is harming his father and family in the society in which they live. Nor does natural right work. For instance, every society in which skyscrapers are built, in which fires are fought, or countries defended under attack, impairs the right to life for some. Neither approach can hold universally and the extent to which either is relevant for a class of cases or for a particular case requires dense analysis.

Rawls's contract theory

Rawls's first book *A Theory of Justice* (1971) was based on concepts from choice theory which, as I will show, he did not understand. More importantly, his use of the concept of fairness as central to justice independently of what is good is dubious. Let me offer one example. Many economists believe that the poor state of the housing market is a major problem in current efforts to restart the economy. One corrective that has been suggested is writing down the amounts that must be repaid on defaulting mortgages on houses the value of which is significantly lower than the borrowed sum. This has been opposed on the ground that it would be unfair to those who honestly stated their income and who are

paying off mortgages on which the debt remains greater than the value of the house. I agree this would be unfair. However, if the analysis is correct, it may be desirable in the circumstances. In this sense it may be a just solution.

Nonetheless, great cachet attended John Rawls's theory of justice because of the belief that he had been able to wed choice theory to contract theory to produce a general theory of justice that would be independent of context. However, game theory is not a general theory of choice, and even within game theory, let alone bargaining theory, different models apply to different situations. The analysis below is a sketch based on an extended analysis.[10]

Rawls's formalistic approach generalizes one aspect of the bargaining model: a determination of what rule for decision would be chosen for a particular bargaining model if the parties did not know on which axis of the game they would be placed. In this sense, he argued, it would be fair between the parties and one could let one's enemy choose for one.[11]

He then added a qualification that the parties could not know what the world is like before choosing the rule. They would choose from behind a 'veil of ignorance' in which they did not know in which society they would be born or what its circumstances would be. With this move, Rawls excluded an essential element of choice theory, the payoffs for intersecting strategies. The proofs of choice theory *require the very information that Rawls excludes*.

Choice theory depends upon the relationship between alternative rules and what the world is like. If one does not know what the world is like, one cannot evaluate the outcomes of different moves. If one does not know how a rule impacts outcomes in the real world, there is no ground for choosing it. One is in the position of a primitive man with a Rosetta stone.

Ignorance of which axis one would be placed on in agreeing to a rule is an acceptable device in some bargaining games, whether single-shot or repeated, only if there is enough information about what the world is like to judge that a particular rule is superior to alternatives. If the parties choose rules of a risk-minimizing character, they know that they will assure an acceptable, even if not an optimal, expected result. If they prefer a different risk orientation, they will choose a different rule. If they cannot agree upon a rule, whether because their attitudes toward risk are incompatible or for some other reason, no rule will be fair, even in the very narrow sense of Rawls's theory. It would not be wise to allow even a friend with different concerns, let alone an enemy, as Rawls suggested, to choose the rule.[12]

Another fatal flaw of Rawls's theory is one that attended Hobbes's theory. It does not establish a moral ground for keeping a contract if doing so is on the whole, and taking into account repeated play considerations, disadvantageous. This is obscured by Rawls's use of the terms justice and fairness with respect to his hypothetical contracts. However, even though fairness may be an aspect of justice in some moral theories, it is difficult to see how either concept rises to this level in a theory that denies knowledge of what is good and that bases its position on the optimization of preferred outcomes rather than on the moral evaluation of rules and outcomes.

Even if one agrees that fairness is a good – and this is not relevant in a theory such as that of Rawls which abjures knowledge of what is good – it is not the only good that needs to be taken into account, for instance, reducing global warming even though both the benefits and costs may impact very unequally on individuals or groups, depending upon actual circumstances. Thus, for instance, one may prefer one rule if the inequalities are modest and another if they are gross, even apart from one's own circumstances, and vice versa. Furthermore, fairness does not have a common meaning – for instance, giving to each according to need or according to production are but two among numerous alternatives.

Because choice theory uses ignorance only within the framework of a defined situation, Rawls's veil of ignorance left him with awkward questions whenever he related his theory to the real world. He tried to respond to the recognition within the choice community that minimax assumed a conservative stance toward risk by an ad hoc argument that at best was limited in time and place. He claimed that one might opt for risks for oneself but not for one's children. This claim might be true for many in Middle America but it was not true for the Flying Wallendas or military families. Furthermore, many of the great advances in science, art, and politics have occurred only because risk did not deter some of those who took them.

Rawls's first book and his second book contain many specific ad hoc principles and adjustments. One example is his argument for reducing risk. A second example is his injunction to improve the lot of the worst off. In addition to being arbitrary within his system, it is entirely open-ended. Is 'worst off' determined by low income or by failed expectations? How badly off does one have to be to be a member of the worst off? How much and what type of improvement is required? What if such an effort would compromise the ability to build a defense force? Why should anyone pay a price to help the worst off unless this is a good? Would one support a one-person one-vote system if instead of being bell-shaped the

distribution of intelligences were u-shaped? Would one want to allow all to take a lottery ticket for a position if many are cheaters and others ethical? The generality of Rawls's theory is undermined by his ad hoc adjustments. His ad hoc adjustments are unsatisfactory because they have no dense relationship to any social reality. One is in the position of someone who can recognize the marks on a Rosetta stone as writing but who lacks the cognate information required to translate more than one or two words in a sentence of ten or twenty.

The good, human nature, and feedback systems

One great value of the Aristotelian approach to ethics lies in Aristotle's understanding that the subject rests on the nature of the human and of what the good is. No approach to the subject that fails to follow Aristotle in these respects will be able to treat ethics properly.

The contemporary concept of a feedback system is compatible with Aristotle's concept of nature. With this concept, desires, which play an important role in Aristotle, reemerge as outputs of an existing feedback system in its relationship to the world of referents, including the self. The judgment that a desire is a good is a judgment of an actual or a potential transactional product.

How can one judge the relationship between nature and desire in order to arrive at a judgment of what is good? If one did not know the purpose built into an air-conditioning system, one could infer it from a careful examination of its behaviors over time. Because there is only a single variable it is designed to control, it is a determinate system.

If more than one variable needs to be controlled, the system will not be determinate and it will be more difficult, and possibly impossible, to determine what its nature is just by observing its behavior. When we turn to the human organism, the situation is even more complex. The nature of the system evolves over time as it responds to inputs or solves its problems. And it differs to some extent from individual to individual.

Human systems do not start from identical natures. For instance, we know that the mating behaviors of some animals can shift with alternative placement of a single gene within a chromosome. It is likely, even if not yet proven, that differences in such placements or in early environments may make more likely important differences in the behavior of particular humans in a variety of situations. Furthermore, selection for eufunctional characteristics within societies may lead to drift with respect to the distribution of characteristics in societies.

It is likely that human nature at least partly incorporates what is good for others into what is good for the self. Such relatively weak creatures as humans could not have survived in the absence of group protection and extended nurture. Altruism and a need for love likely are embedded in most individual human natures by natural selection. How they are embedded is variable with individual and social development. How they are expressed depends upon the milieus in which they are exhibited. They produce moral concern by moving the individual past an exclusive concern with self-interest and advantage.

A major problem with the evaluation of such positions results from attempts to treat them universally. The relationship of nature to dispositional considerations is central to this issue and will be considered in the next chapter along with the test in principle, which I first proposed in the early sixties.

Theories and world views

How does one judge the truth of theories? I examined competing protocols for the acceptance of theories in *Science, Language, and the Human Condition*. I found instances in which each of alternative protocols is more satisfactory than the others, and instances in which each is less satisfactory than the others. I concluded that a judgment of truth rests on a comparison of how competing theories fit a contemporary world view – that is, on which of these theories is more coherent with a contemporary world view. Judgments of the truth of theories, and hence, of their premises will evolve dialectically as our knowledge of the world evolves.

The critique of the thesis of the Cargo Cultists rests on the lack of fit of the thesis with a contemporary world view. The identification of Venus as the second planet from the sun to which Newton's theory can be applied and the distinction between a planet and a star depend upon a world view that is based upon convincing evidence. This position is consistent with the discussion of logic and sense in Chapter 4, an earlier version of which appeared in *Science, Language and the Human Condition* (Kaplan 1984. See pages 83 and 84 of that book for a discussion of the relationship between the concept of fit and the concept of coherence).

The differences between the Cargo Cult case and the Fátima example are as important as the similarities. In the Cargo Cult case, the evidence is so extensive and it fits together so well that the Cargo Cultists' account of the provision of the offloaded materials for all practical purposes is ruled out. It does not exclude the possibility that God intervened in

other still undetermined ways. The account given above of the Fátima case does not rule out divine intervention. It establishes only that the fit of the evidence does not support divine intervention sufficiently to affirm it in this case. There are possible events that could rule it back in, even if my world view leads me to doubt their likelihood.

3
Evolving Human Nature and Multi-stable Justice

There are at least two plausible reasons for following moral norms when this is disadvantageous. One may stem from a fear that a failure to do so will be punished. The other may lie in a belief that acceptance of the costs is morally required. It is difficult to see why a reasoning individual, in the absence of fear of punishment or of even worse results, would follow a disadvantageous norm unless a preference for morality over advantage has a basis in that individual's nature in at least this case.

Yet the efforts of deontological theorists to find a basis in human nature for the acceptance of moral norms have been rejected by adherents of virtually all other types of moral theories. On the other hand, history presents many cases of individuals who obey moral norms at great cost. Perhaps the failure to find a convincing relationship between human nature and moral obligation is produced not by the absence of a relationship but by the ways in which the relationships between human nature and moral choice have been investigated.

Consider the tensile behavior of metals. If one examines the tendencies of metals to exhibit tensile behavior, it is possible to treat tensile behavior in terms of the dispositions of different metals in different circumstances. An analogous treatment of human nature would examine its dispositional predispositions in a variety of circumstances. This is its nature. And one can examine it in general, in different types of cultures, and in different types of situations. Such an examination, which will make human nature relevant to moral choice, will be made in this chapter.

Intrinsic to this investigation will be the complementary relationship between an analytical account of the moral system from within which judgments are made and the ideographic or pragmatic aspects of the situations that are critical to applications.

Human nature

Whether the concept of human nature is relevant to moral inquiry depends upon how its use fits hypotheses that assert a linkage. Aristotle noted that humans are social animals. If what Aristotle meant by the concept of 'social animal' is that humans adapt to acculturation, then he was stressing what this author regards as at least one key relationship between human nature and moral analysis.

No society can continue to exist unless its members are acculturated. Indeed, individuals cannot know who and what they are in the absence of acculturation, for the meanings of relevant concepts cannot be explored in the absence of transactions with the world.

Libertarians believe that rules are unnecessary if individuals do what conscience dictates. However, conscience has nothing to operate on unless there are rules and beliefs that have a social and cultural foundation. Some Buddhists believe that it is immoral to crush a flea. The Aztecs believed it was conscionable to tear the heart out of a living captive.

The procedure described below, allows individual consciences to judge the application of cultural norms and to evaluate alternative transitions to other conditions. Rather than operating from the original condition of Rawls, which has no content, humans can use this procedure from the framework of the actual, evolving human society in which they are placed and within which they can test its assumptions.

If Aristotle was referring to bonding, or perhaps even to empathy or sympathy, then he was referring to what this author would regard as general features of human nature that influence estimations of obligation. A society that excludes such considerations eventually will generate destabilizing unrest.

Human nature is not something that is fixed even if the DNA of individuals, as distinguished from that of the class of humans, is fixed. Individual human nature evolves as the fertilized egg develops into an adult. If neurological development does not permit empathy, then the agent that evolves in these circumstances will find costless the hardships it imposes on others. That is its nature.

If an agent is acculturated to a particular culture, then its standards are related to an *initial* judgment of its obligations. That is its nature. However, reasoning individuals would not necessarily feel obligated to such standards under all conditions. They would have a *disposition* to accept obligations only under a limited range of circumstances. Sympathy, for instance, would affect moral behavior analogously to

the way in which tensile strength affects the behavior of metals. *In this chapter human nature will be treated in a dispositional sense.*

Theoretical schematics

If acculturation is relevant to moral choice, then a theory of the system to which the agent is acculturated, and of the societies with which it is in a relationship, are relevant. Einstein's theory did not emerge from adapting Newton's theory to a particular new context even though new developments had to be taken into account. A series of developments in science at the boundaries of Newton's theory, including those that led to Maxwell's equations, created problems for Newton's theory. The attempt by Einstein to solve these problems led to relativity theory.

In social science, the units of inquiry are not subject to common measurement. Thus, the relevant theories are not general. For instance, the powers of a president differ from those of a dictator. And the rules that apply to the roles also differ. To the extent that theory applies to social systems, it relates roles and rules to the systems in which they function and to the conditions under which they can continue to function.

The change from Newtonian to relativity theory did not rest on adjustments to individual contexts because the changed meanings of the concepts are related to the *corporate*, that is, the *systems character* of the theories. For instance, the concept of mass in relativity theory is different from the concept of mass in Newton's theory because its relationships to other physical concepts such as energy are different.

When deontological theories of justice are examined below, their rules will be shown to differ with type of cultural system. There is no absolute set of rules from which any particular set of rules can be derived any more than the theorems of Einstein's theory can be derived from the theorems of Newton's theory. The evolution of theories and of concepts in physics, in language, and in morals occurs *dialectically*.

In the 1960s I had been influenced by the discussion of tests relevant to the acceptance of theories and applied the concept of a test in principle to moral analysis. Yet, if my analysis in *Science, Language and the Human Condition* which ultimately rejected that approach in favor of coherence between a theory and a world view, applied to moral analysis I should have rejected the idea of a test in principle.

I had not been aware until 2012 of the discussion of the test in principle in the review by Vincent Luizzi of *Justice, Human Nature, and Political Obligation* in *The American Journal of Jurisprudence* (Luizzi 1977). Luizzi astutely noted what he called a problem in my position.

The so-called test in principle, which, thanks to Luizzi, I can now see would be better understood as a method for making moral inquiries, starts with one's own framework of acculturation. But it involves an examination of justice from other frames of reference: the societies within which agents are situated; different subsystems of those societies; individual roles; the norms that apply to roles within the system of membership; and other boundary conditions. The relations between the norms of a system and good outcomes for individuals are in a state of complementarity.

Moral analysis depends on the character of the issue. If the issue is one of intervening in an external society, the recommended procedure takes into account how justice is perceived by the subsystems of the external society. If the issue is a conflict with an external society, it is used to take into account how the stance of that society is influenced by its understanding of justice. If the issue is one of change within one's own society, it is used to explore how issues are perceived by different subsystems of society. Examples will be offered later in this chapter.

The other elements that affect judgments of justice will be discussed after a brief inquiry into the major accounts of justice. Among those elements are utility analysis, which will support the thesis that justice involves a multi-stable balance among rights and obligations, and acculturation, which is central to the identity of agents and, hence, to the acceptance of obligations and the pursuit of rights. Other elements most likely embedded in human nature such as bonding, empathy, sympathy, and altruism establish a rebuttable complementary interest in the welfare of at least some others. Evaluations of such interests are modified as the relevant considerations are taken into account.

This approach does not produce a neutral position. Instead it allows different transactional processes in similar and in different systems to be investigated and judged by an agent with a knowledge of its identity and circumstances that understands the moral perspectives and situations of others. It differs radically from Rawls' original condition because knowledge of the state of the world and of the situations of agents are *essential* components of deciding whether the rights and interests of others should be taken into account.

The leading approaches to justice

The leading approaches to justice are those of natural law and natural right philosophers, of Michael Oakeshott, of John Rawls, and of utilitarian theories. Each of these positions is well regarded by many because

they do rest on considerations that need to be addressed by accounts of justice and obligation. Except for Oakeshott and utility theories, they are insufficiently responsive to the pragmatic particulars that *complement* the analytic components of moral theory. In Oakeshott's case and in that of utility theory, they lack an analysis that establishes obligation.

Deontological theorists are correct in believing that rules and rights are important and that they are related to nature. Oakeshott is correct in holding that justice cannot be understood adequately unless it takes into account the details and standards of a status quo. Rawls is correct in believing that fairness as he defines it is very important; it is particularly important in modern democratic societies. Utilitarian theories correctly relate choice to the preferences of agents. Each position, however, leaves out of account important aspects of justice and obligation.

One important difference between the positions should be noted. Both deontological theories and Rawls's theory start from foundational or default positions. Oakeshott's approach, like the procedure proposed in this chapter and of utilitarianism, does not. Consider theories of natural laws and of natural rights. A problem with the use of the metaphors 'natural rights' or 'natural laws' in the relevant theories is that the meanings of rights and of moral rules in actual societies are shaped by the multi-stable interrelationships of the relevant concepts, and not by contextual adjustments from universal concepts of rights or responsibilities. That is why infidelity can be a ground for justifiable homicide in one society while a husband who punches his wife because of infidelity may be guilty of a crime in another.

Even if different systems define honor or justice, and so on, in the same way, they lack common measures and define only a category. For instance, honor may be defined as observing the rules of society even at personal cost. Justice can be defined as giving each its due. However, unlike the case in physics, there are no common measures for these concepts. For instance, an honorable Samurai does not have the right to tell the truth if it will injure his Daimyo. An honorable official in America is obligated to inform on the illegal acts of his leader even if it injures the leader. And a father in a traditional mid-Eastern culture may be bound by honor to kill a raped daughter even if this causes him anguish.

Even though standard deontological theories seek to link rights, obligations, or virtues to nature, it is not possible to link the definition of a category such as honor to its meanings in different societies by adjustments to particular contexts. That would be as incorrect as trying to trace differences in the concept of mass in Newtonian and relativity

physics to particular contexts while leaving out of account the *corporate relationships* of the theorems of each theory.

Natural law theorists sometimes argue that there is a natural law against taking life. However, in societies which accept a natural law against taking life, there are always some circumstances that justify taking a life. To the extent deontological moral theories are applied with *seeming* success, they substitute for the defined categories the richer types of information that can be understood better from the ways in which these concepts are used in a particular society. This permits examination of the fit of current cultural understandings to particular applications in particular sets of circumstances. However, if deontological theorists do this, they are left with the problems of Oakeshott's method.

I will ignore Oakeshott's belief that the powers of the state should be limited to adverbial constraints. That aspect of his thought will be taken into account when I consider libertarian theses in Chapter 11. In the present chapter I am concerned only with locating relevant standards, as he does, in the circumstances of actual societies rather than with developing them from abstract principles. I believe that this is where we do find our standards. And, unlike Rawls, I accept that we cannot reason morally in their absence, even if our judgments cannot be reduced to them.

Toulmin's belief that Oakeshott's thesis is subjective because other societies have different standards is not, as subsequent analysis will show, a telling criticism. However, Oakeshott's method does fail to show why one should accept the obligations that tradition imposes upon one if these are costly. Oakeshott does hold that attempts to deduce moral choices from a set of axioms will produce tyranny. However, he has not shown that a universal rational theory is the only alternative to tradition. For instance, my approach to moral reasoning proposed in this chapter starts with the standards of a given society and adjusts them to conditions while taking dispositional human nature into account. However, unlike this approach, his method does not establish a ground for taking into account the values of those who start from different moral standards unless the standards of one's society – and this would be unusual – call for this.

The arguments that Rawls borrowed from choice theory as a foundation for a universalistic theory of justice were fatally flawed[1] when they were divorced from knowledge of the world to which they would be applied. More importantly, neither the original condition nor the concept of fairness is relevant to many proposals for change in actual societies. That is why Rawls had to add two maxims to his original

theory, maxims that apply to actual societies, with their greater wealth of information, rather than to an original condition. Why these are defective will be explored after utility analysis is considered.

Other problems also attended Rawls's theory. Rawls held that good people would follow his rules. However, even apart from the indeterminism of his method, he was not able to provide a reason for anyone to regard being good as an obligation when this is disadvantageous. Nor could he explain why one concept of the good was better than any other. His examples from choice theory had no common core. They are ad hoc devices for which he cannot provide a rationale.

When the difficulties of a reliance upon choice theory no longer could be avoided, Rawls based his theory on a definition of fairness in which identifying characteristics are left out of account, at least in democracies. Rawls believed that this definition was capable of achieving agreement from those who carefully considered it. Rawls recognized that such a universalistic definition would not correlate with judgments concerning the good. Therefore, he did not incorporate what is good into his theory of justice.

Rawls's definition of fairness is not relevant to many of the most striking conflicts over justice, for instance, over whether one should be rewarded according to need or according to contribution. Taken literally, his definition would require that if parents die intestate, their estate should be divided among the members of society rather than among their progeny.

Perhaps Rawls intended his criterion only for positions in democratic political systems. In that case, suppose a mayor appoints a black police chief to promote cooperation from a black neighborhood that believes the police have discriminated against it. If there is a white candidate with somewhat better credentials, this would be unfair, and hence unjust, according to Rawls's definition. Others, however, would see the appointment of a black police chief as a just response to the actual situation. They would see it as symbolizing the incorporation of the black community as a valued part of an inclusive community, a subject that will be examined further in the section on human nature and choice. Such judgments depend upon taking into account the relevant factors, including what is good.

Some limitations of utilitarian theories will come into view when the role of utility is examined.

The procedure of this chapter addresses the previous problems of the major accounts of justice. An anchor for obligation in the sense of identity will be presented in the section on the importance of social standards. In the two sections that follow that section the case will be made

for the role of human nature in taking into account the interests of others, including those who are acculturated to different moral standards or with whom one has not bonded. The issue of whether an objective account of the good is possible will be taken up next.

Can evaluations of the good be objective?

Stephen Toulmin regarded a society's standards of justice as subjective because different societies start from different moral systems.[2] However, a strong case can be made that propositions about the world, including judgments of what is good, reasonably can be judged to be true provided they take into account the fit and density of evidence from a variety of part systems the whole of which constitutes a world view.

For instance, consider again the case of the Rosetta stone. If something like it had been found in 7000 B.C., it would not have been recognized as writing. When it was found, it was recognized as writing but could not be translated. Later, when one of the lines was translated, the signs in the other lines could be translated, even if some elements remain open to dispute. A similar type of analysis applies to the good.

Because Toulmin's account of what is good was definitional, he failed to link judgments of what is good to transactional information. For instance, a medicine that is good in the sense that it relieves an illness may be bad in the sense that it may kill another human who has a different set of conditions.

Toulmin's approach depends on the hypothesis that moral inquiries do not merely begin with the norms of one's society but that they are reducible to them. Suppose that one begins an inquiry by accepting those norms. Even if moral norms are idiosyncratic to a community, they evolve. They evolve because conflicts in their applications arise as conditions in the world change and as knowledge of different partly independent part systems or of other societies changes.

For instance, there is now evidence that the genes that produce physical form and those that produce sexual orientation may not be invariably coordinated. Although this by itself would not determine that the rules for marriage should be indifferent to the distinction between male and female, it surely places an evaluative examination of the balance of rights and responsibilities in a significantly different light.

This makes the case for objectivity in one sense: the evolution of standards within a society. However, it leaves open not only some situational conflicts within society but, more importantly, differences between societies.

The remainder of this chapter will show how objective, even if not determinate, judgments can be applied to obligations within a society, to obligations across societies, and to comparative judgments of societies. I note that these are complementary accounts that influence judgments because they influence understanding.

Utility and justice

The concept of utility is central to evaluations by agents of possible outcomes. Utility is related to the person or to the social unit from the framework of which utility is judged. Recognition of this factor is the strong point of utilitarian theories.

Absent a foundation in the standards of society or in nature, these preferences are personal, that is, related to the self. Moreover, utiles do not exist as fungible units. Utiles can be neither added, nor subtracted. No instrument can measure utiles.

Thus, choice theory, contrary to some early enthusiasms, cannot provide a definitive solution to disagreements over the utility of divergent preferences. If every problem were like a division of $100 in which the utility of dollars is identical for the players, the 50/50 Nash solution would be uniquely good because neither player can offer the other a good reason for accepting less and neither can propose a good reason for demanding more.

However, there are few definitive solutions in the real world. Asymmetries among agents, many of which provide good reasons for demanding more or offering less, are legion. Even the simplest of asymmetries lead to differences in game solutions.

In game theory, minimax regret (the maximum of the minimum gains) is an acceptable alternative to minimax (the minimum of the maximum gains). In bargaining games the criterion of Howard Raiffa, in which equilibrium occurs when the players have the same amount to lose, is an acceptable alternative to the Nash solution in which the players get the midpoints on their respective utility schedules.

Moreover, the solutions of game and bargaining theory use numbers that are only hypothetical because no common measures exist. They may be useful as analogies for some real world problems that seem more or less like them. In any event, the world is replete with asymmetries that lead agents to divergent judgments of the utility of possible outcomes.

In addition, for reasons that soon will become evident, an agent's evaluation of a particular outcome does not function independently of other evaluations. It functions as an element in that agent's multi-

stable schedule of preferences. Consider, for instance, a decision to buy a ticket to Big Lotto. It is widely claimed that such a purchase is irrational because the payoff discounted by the probability of winning is less than the price of the ticket. However, buying a ticket may be rational, even if one does not take into account the pleasure derived from gambling.

Consider a father making $60,000 a year who must find funds to support five children in college. If he spends $1 a week on a Big Lotto ticket, which he might otherwise spend on a soft drink, this might be a good decision even if his chances of winning are miniscule. (His contribution of $1 a week to a college fund would be ludicrously deficient.) On the other hand, buying 500 tickets each week, even if this vastly improves his chances of winning, may be unwise because it would undermine his ability to provide for his family's food and housing.

When this father evaluated the use of his income, he had an ordinal preference for a multi-stable balance of expenditures in which he bought the ticket over an otherwise identical balance of expenditures in which a soda was substituted for the Lotto ticket. An extremely small chance of a very big payoff was worth more to him than one additional soda because college for his children was important to him. (This is consistent with von Neumann's utility theory. The numbers in game boxes, for instance, represent trees of sequential choices that produce ordinal measures that apply to outcomes of choices, not cardinal measures that have independent meaning).

Thus, the evaluation of even this simple type of individual choice is related to its place in a complex mix of choices in which both the system, for instance, family, and the circumstances and goals of members of the family, are taken into account and evaluated when alternative choices are weighed.

There is nothing arcane about this. Any engineer knows that product design must be evaluated. For instance, in designing an automobile, one evaluates, among other things, the desire for speed and the desire for economy, or the desire for speed and that for safety. If one examines a new design, one can investigate whether improvement in one respect is worth the cost in others. Thus, comparison is central to problems involving utility.

When John von Neumann developed game theory, he took the concept of comparison into account. The payoffs for strategies, given the strategies of other agents, included all elements relevant to their evaluation. The numbers in the payoff boxes reflected their ordinal assessments. Thus, evaluations of individual or social payoffs necessarily reflected the ordinal evaluations of their uses.

This is critical for the understanding of justice. If justice is related to comparative evaluation, one can ask whether one may be willing to pay with respect to some preferences in the hope of an improvement in others. One revolutionary, for instance, may take into account devotion to the cause with activities that risk his life while another merely donates money.

Thus, ordinal rankings based on such comparisons can take into account the strength of preferences without assuming that cardinal numbers that are common to all agents can be attached to the choices. It is often claimed that interpersonal comparisons of utility cannot be made. However, if one examines a wide range of ordinal preferences, one can make a rough estimation of the two revolutionaries' devotion to their cause and of the harm that is done to them when their desires are impeded.

Similar estimations can be made by opposed agents of the costs that each is imposing on the other. The fact that these hypothetical valuations may be far from definitive does not mean that they are meaningless or irrelevant. Their relevance to justice will be specified in the section on general characteristics of human nature. My approach to moral reasoning brings them to moral consciousness.

Why general maxims are inconsistent with utility analysis

All theories of justice require a method for evaluating a status quo and changes in it. However, one cannot move from a general definition of justice to a critique of a particular society simply by adjustment to context because the meanings of the concepts that are employed depend upon how they are incorporated in a system; for instance, the meanings of energy and mass are different in Newtonian and Einsteinian theory. This is why Rawls had to supplement his criterion of fairness with maxims. However, his maxims are not adequate because they are detached from the relevant comparisons.

In his second book, Rawls resorted to two default maxims: to improve the conditions of the worst off and to provide equal access to the most basic system of liberties. These appear to be applicable only because the actual situation is substituted for the virtually empty original condition when adjustments to context are contemplated. But they are problematic even in this case.

If one starts with an actual economic or political system rather than from an original position, changes in it can be ranked ordinaly. However, this can be done only if the consequences are assessed across a range of criteria that affect matters agents consider important.

For instance, if one were a director of the Federal Reserve Board, one might have to weigh the multifarious consequences throughout the system of acting against inflation or damping the possibilities of recession in this particular set of circumstances. How one comparatively evaluates these goals affects different complexes of individuals in different ways.

Suppose that Rawls would interpret the difference principle as justifying a law that would increase the dollar income of the lowest paid. Dollars are fungible but their utility measures are not common in analysis except under highly limited conditions. What a dollar is worth to a worker will differ with the worker. Suppose most of the jobs at issue are first jobs that may serve to train their holders for better jobs, or held by teenagers who are part of a family. They may be doing much better in this set of circumstances than a quantitative measurement of dollars would indicate.

Suppose a rule that increases dollar income at the lowest ranks bankrupts some businesses that their owners have spent years in building and the success of which is intimately tied to their image of who and what they are. These entrepreneurs then may be worse off in some meaningful sense than the lowest paid workers even if they still have more money. One may like or dislike a change in the minimum wage, but one can make the required evaluation only by taking the different types of cases into account.

Suppose one must choose between a tax rule that assists poor people and one that assists artists. Some might choose the tax code that helps artists in a given set of circumstances even if they are better off than poor people because of the enjoyment the arts bring to human beings.

In principle it is possible to produce an ordinal, even if not a cardinal, ranking of political systems. Because their features are discrete, one can contrast how the differences in features produce differences in consequences. The types and importance of the freedoms they allow are surely relevant considerations. However, there is no way to determine generally what an optimal level of freedom is in a political system. The concepts are not fungible. And they are often not comparable.

Furthermore, every type of freedom depends on a corollary constraint. For instance, the freedom to fly with minimal fear of being hijacked depends upon an appropriate check-in procedure. Suppose objections are raised to the actual procedures. Only an evaluation of changes from a status quo will permit a comparative ordinal ranking of more onerous check-in procedures that produce a somewhat lowered risk of hijacking and of more lenient inspections with a somewhat higher risk.

This mode of analysis applies to any suggested change in the rules of a system or in their application. Judgments about whether to increase some freedoms or to relate them to the characteristics of only some members of society depend upon an analysis that takes a variety of issues into account. It is the comparative evaluation that is central to judgment of whether a system is just.

Thus, evaluations of justice rest on a comparison of payoffs. This comparison is relevant from the standpoint of the person (or social unit) that is at the focus of analysis. Because individuals (or social units) and their needs are different, there is ample room for disagreement about which set of outcomes should be preferred. Thus, issues of justice may involve disagreements over which set is to be preferred.

Sometimes choices that take into account the needs of others are faulted because they also support needs of the self. Then it may be argued that the claim of altruism is hypocritical. However, important choices have mixed motives precisely because they rest on a comparison of considerations. As Hillel said, 'If I am not for myself, who will be? If I am not for others, what am I? If not now, when?'

How can the range of disagreement over which set of outcomes is preferred be sufficiently narrowed to assist the pursuit of justice? The rules of a society constitute a framework that reduces the generality of the features that claims for justice seek to change. This is the consideration that underlies the usefulness of Oakeshott's approach to the subject of justice.

Although my approach to moral reasoning also starts with the mutually understood rules of the system of acculturation, the discussion in the next section will show that this forms a basis for preference through identification and introjection. This involves an objective relationship to the agent's evolving human nature.

The ensuing sections of this chapter will show why moral inquiry is neither completely open-ended (relativistic) nor confined to the initial framework of moral judgment, even though there are no standards that resolve all disputes. Although uniquely just standards may not exist, my approach may narrow the range of acceptable standards and may place many others outside the bounds of acceptability.

The great importance of the understandings of actual societies

The evidence strongly suggests that a tendency to form social groupings is inherent in most animal natures. There are compelling reasons for humans to form societies that constrain choice. Membership in a society

protects the individual against external nature, external foes, or internal foes. Human societies, if they are to endure, require understandings of how the behaviors of individuals fit together. Although these understandings may be grouped under categories such as honor or the right to life, their meanings are bounded by examples from past behaviors. These examples, when related to the system of reference, provide an understanding of why rules are implemented in ways that cannot be determined by relating abstract universal statements to individual differences in context. Even if these examples do not determine judgments in a unique manner, they provide a complex framework of understanding that places important bounds on possible disagreements.

Even more importantly, they are central to the understanding by agents of who they are and of their interests and values. An agent's self-image, its identity, is formed by its transactions with others. This occurs when the introjection of cultural norms is accompanied by cathexis. Such selves are selves in which the *dispositional* meanings of rights, obligations, or virtues establish a relatively firm base in their individual natures.

If all standards were open to reconsideration simultaneously, there would be no relatively consistent framework from within which alternative choices could be compared. Thus, acculturation is a precondition for a meaningful life in which important choices can be linked to one's sense of identity rather than only to immediate advantage or loss.[3] Even though the sense of identity is subject to evolution, the need for a sense of identity is deeply rooted in human nature and integral to the preservation of good societies. Treating norms as conditional choices undermines the sense of identity that is requisite for a eufunctional society.

However, a self with a strong sense of identity still may be what many outsiders would consider to be a bad self. For instance, one acculturated to an intensely selfish society may view as appropriate the advice to 'never give a sucker an even break'. In such a system, this behavior may be reinforced by a social consensus that agents who do not abide by it are foolish. Nonetheless, there are general aspects of human nature that can call such a consensus into question.

How some general aspects of human nature change understandings of morality

Bonding, altruism, sympathy, and empathy, for instance, are predispositions embedded in human nature. Although humans are not imprinted as are ducks – which imprint on the first animal that is met after birth – the empirical evidence indicates that group cohesiveness, or bonding, is a very strong part of a many animal natures.

That is very likely why the good of family members, or tribe members, and so on, is given more weight than that of strangers in virtually all human societies. Thus, whether a bond is present will *influence, but not determine,* the moral perceptions of agents. If justice depends upon the character of a range of considerations, then such relatively general aspects of human nature are related to judgments of justice even though they do not determine them.

Other aspects of human nature may place limits on the obligatory power of bonding. Mirror neurons, for instance, may enable one imaginatively to simulate the pain of others, thus often producing empathy. Altruism, sympathy, and empathy potentially are capable of extending moral concern beyond those with whom one has bonded, even if these others were acculturated in societies very different from those of the agent. They may extend moral concern to animals.

Although hypotheses concerning the place of bonding, altruism, sympathy, and empathy in human neurology remain controversial, the empirical evidence that they play an important role in value choices is so strong that it seems likely that a neurological base for these attributes, if not for specific applications, will be found.

Some contemporary evidence suggests that different areas of the brain are involved in placing value on individual lives and in calculations of the greater good. The evidence that most societies employ both criteria does not prove these recent neurological claims. It does provide support for them.

Such a mix most likely sustains society even though it is inconsistent with rules that are general for all aspects of a society. For example, vast sums are sometimes spent in American society to save individual lives, as when a mountain climber is lost, even though that money could have done more good if spent on a collective task. Similarly, it is tolerable for the rich to afford healthier lives but intolerable, at least in contemporary American society, for a rich person to outbid a poor person for a replacement heart.

Thus, it seems likely that societies that mix efficient solutions in some areas with norms based on group solidarity in others are more durable and meet human needs better in most conditions than would societies organized on either systematically selfish or systematically generous principles.

Human nature, thus, more likely than not, is consistent with designating some choices as intolerable while permitting efficiency to have sufficient scope. In contemporary American society, for instance, the laws permit one business to destroy another because of its efficiency, despite the harm this does, because of the gain in the total economy. But

contemporary American laws limit the conditions under which businesses can risk injury to workers even if such laws are inconsistent with profit maximization.

Other human capabilities may be relevant to the outcomes that are achieved in different societies. Humans have the capability, at least in modern societies, to employ philosophy and science. They can recognize themselves both as distinctive individuals and as members of a community. They have the capability to recognize themselves as members of a species and as descendents of an evolutionary chain. They have the capability to recognize the state of the world as a heritage that sustains them and that they can pass on to those who follow them. These factors may enter into their sense of identity and, consequently, into their evaluations of justice.

Humans also have a capability to recognize how their nature is recursively related to their ability to understand how the world works, a capability that moves such analysis from the subjective to the objective by making dispositional human nature part of the data set. These recursive understandings are often valued as an important part of being human by those who have learned how to engage in them.

It is the former capability that makes analysis of the good and justice possible. It is the relationship of all aspects of a situation, including rights and responsibilities, that is relevant to an evaluation of whether a system is just in its circumstances. It is a judgment of how an agent's decision affects the current equilibrium that is relevant to an evaluation of whether it accords with its obligations in its circumstances.

If the foregoing is correct, it is in the nature of intelligent and informed agents to evolve in their moral understanding. Although this will not eliminate moral dilemmas and although mutually just outcomes may not be universally available, this sets important limits on injustice.

Justice

My approach to moral reasoning is related to the different frames of reference of different agents. By placing agents imaginatively in other situations, in other roles, and in other societies, the agent develops insight into how justice is understood in these other circumstances. The costs imposed on those in other roles or other systems cannot be estimated if an agent does not understand its interventions from their differing moral frameworks.

This does not invoke relativism. The agent may have good grounds for regarding some of these perspectives as better or worse than others.

However, even in cases in which the agent regards another framework of evaluation as inferior, the agent may recognize that an attempt to impose the agent's values, rather than improving the situation, may worsen it. Because the existing system of morals forms the basis for most behaviors, deviations from these standards may have consequences that are disruptive.

In *Things Fall Apart* by Chinua Achebe, missionaries in an African village teach morality in a way that undermines the relationships between village leaders and young people. The failure of the missionaries to apply something like the moral reasoning I propose to the situation in the village removed an appropriate focus for the empathy the missionaries felt for the young people.

The missionaries did not have enough evidence of the harm the local system supposedly was doing to impose their beliefs. And they had little, if any, knowledge of why the system of the village may have been just within the conditions and standards of its time. Thus, even if some degree of intervention could have been justified from their framework of understanding, the missionaries did not intervene in a justifiable manner because they left out of account the disruption and confusion their intervention would cause.

On the other hand, suppose one were in an Aztec village in which the hearts were torn out of the bodies of living human sacrifices. This system may have been just according to the understandings of its time. However, there was no evidence that sustained the belief in the necessity of sacrifice. Therefore, intruders who had power to modify the situation likely would have an obligation to find the least harmful way of working against this practice.

Because contemporary agents can compare their system with one like that of the Aztecs and because these agents have access to ranges of knowledge local inhabitants may lack, they have an objective, but fallible, basis for a judgment that the Aztec system is unjust even in its circumstances. The costs to those who are sacrificed are horrendous.

Because of deficiencies in their states of knowledge, the Aztecs would not have been able to apply something like the procedure I propose here. Unfortunately this is true of many contemporary cultures. Consider a young lady in a traditional tribal mid-Eastern culture who marries outside of the group. She may have harmed, perhaps severely, her family because other families may impose severe costs upon it. However, suppose the patriarch becomes familiar with cultures in which marrying for love works well. This necessarily qualifies the extent to which the

rules of his society can be seen as binding. Suppose he allows himself to have empathy for the young lady. It then would seem impossible to justify killing her.

The procedure of this chapter may place some responses such as the killing of the daughter for her transgression far outside the boundary of what is acceptable. And it may place other elements of the local equilibrium on the route to change. The father may come to see as undesirable a cultural system that places such extreme costs on his children when they do not follow the rules for marriage.

Relationship of this procedure to american politics

Consider the riots in Los Angeles during the civil rights disturbances of the sixties. Are there situations in which violence against established democratic institutions can be justified even if only from the frame of reference of the rioters? What if the system is almost totally unresponsive to the needs of a segment of the population? Suppose there is no other action that will sufficiently publicize a very bad situation. Can a riot in these circumstances be as justified as the civil disobedience of Martin Luther King?

Suppose reasonable individuals in depressed areas recognize that their situation is so bad that only a riot has the possibility of moving the system from its immobile status. A prosecutor who places himself empathically in the position of one of the leaders of a riot may decide that the riot was a just response to the system. As an official, he even may see the riot as a desirable producer of change. Nonetheless he may prosecute because of the social costs of a failure to prosecute.

A leader of the riot who places himself empathically in the position of the prosecutor may understand that prosecution is a just response despite the justice of the riot. The leaders of the inclusive community may come to the conclusion that justice requires amelioration of the conditions that led to the riots. And sentencing could take mitigating circumstances into account. If this represents the actual situation, then it may be possible to create a tolerably just solution to the problem.

Suppose, however, that any amelioration of conditions or lessening of punishment would multiply violence. Then even a test in principle might not lead to an amelioration of conditions because the interest of state officers in the welfare of the general population may outweigh their interest in justice for those in the depressed community.

Obligation and political systems

An agent who has bonded with a community, and who employs my procedure for moral reasoning, will recognize an obligation to follow its understandings even though this may be individually disadvantageous provided that the conditions that support following those understandings are present. However, if the reasons for disobeying these understandings are sufficiently stronger than for obeying, given the agent's duties and the range and depths of its obligations, then following those understandings may not be recognized as an obligation.

Even within relatively simple systems, some norms can be appealed to in opposition to the imposition of other norms. Because contemporary humans have a vast repertoire of alternative and imaginative orders to call upon, they may inquire into whether other forms of organization better satisfy human needs as they understand them.

If desired changes can be made within the mechanisms of the existing system, then the proper effort may be recognized as one of reform. If not, it may be one of revolution. On the other hand, if the costs even of reform are too high for the society, then an agent who thinks the society is better than the available alternatives may recognize a duty to continue to support it because of others to whom obligation is owed. Under some circumstances defection may be recognized as just.

Socrates' advice was to know oneself. If one knows oneself through a procedure in which one places oneself imaginatively in the positions of others, one will know that one is a moral self whose natural interests in the welfare of others will lead one to seek justice in all situations in which the conditions of life and one's responsibilities give sufficient weight to the interests and moral standards of others. Such a self also will know that its judgments are fallible, that they are related to its situation and interests, and that others may have good reasons for making conflicting choices.

Addendum: Freedom and choice

In this addendum, I will show that many of the arguments, and even of supposed paradoxes, on the subject of freedom stem from two factors: treating the concepts of freedom and of constraint as foundational rather than as correlatives, and failing to distinguish between a theory and its application.

There is an old philosophical debate as to whether human choices are free or are fully determined. It is true, and no reasonable person would

question this, that a number of constraints upon freedom of choice do exist. The only such constraint recognized by Hobbes is physical constraint. A person bound to a post by iron chains is not free to leave that spot according to Hobbes, but a person threatened by weapons is free to disregard the danger and to move. Although there is a sense in which we are absolutely constrained by physical constraints, few of the actual physical constraints absolutely preclude contrary action. A Houdini could slip out of his chains, while another individual paralyzed by fear might remain unable to elude the constraint imposed by a toy gun. Still other individuals might be so constrained by habituation, perceptive delusion, moral fanaticism, or strategic inhibitions that their behavior in given types of situations becomes completely stereotyped, predictable, and uniform. Looked at from the obverse perspective, some individuals may appear to themselves to be able freely to choose from among alternatives; other individuals may have the oppressive sense of being completely constrained either by external circumstances or by internal inhibitions.

Some of the classic philosophers defined freedom as the recognition of necessity, by which they meant that man was free when he acted in harmony with his own nature. Others responded that this freedom was an illusion if it followed that man's actions were products of his biological being and of his social and psychological upbringing. Choice was an illusion, because man was constrained to do that which he was psychologically motivated to do and those who understood the motivations could predict the actions. Others questioned what freedom might be if use of it did not respond to a man's character and nature. If it were not related to these in what sense would the action 'belong' to the individual?

In both the case of determinism and that of indeterminism, then, freedom might appear an illusion. In the one case, the act would be determined by circumstances, by constitution, and by upbringing; in the other case, the action would be the product of chance or of accident and thus unrelated in any meaningful way to choice. In the one case, freedom is the working of inexorable necessity; in the other, freedom lies in the chance deviation from the norm produced by the flux of events in a complex world. In the one case the world is completely ordered; in the other the world contains surds that deviate from any rule and that produce discrepancies between classification and individual. Yet an accident, or a deviation from a rule, is always an event that eludes control, and it therefore, although free in this sense, is a restriction on the freedom of the chooser. Thus the philosophy of Peirce, or the earlier

one of Heraclitus which includes chance and accident, would seem on superficial examination to exclude freedom as much as fully deterministic worlds.

The difficulty with such discussions is that they occur at such a high level of abstraction that they do not distinguish between different kinds of systems. A railroad train may be said to have two degrees of freedom because it can move only backward or forward along the track. It cannot travel off the track or even onto other tracks for which the rails have not properly been set. A bus has many more degrees of freedom, for it can be driven onto any existing road and even across some surfaces that are not roads. An amphibious vehicle can travel on the ground and in the water as well. It thus has a degree of freedom that the bus does not have. An automatic lathe has the freedom only to pursue a preset schedule of operations. Industrial equipment incorporating negative feedback has the capacity to reset or reschedule operations if certain deviations in the external environment are noted by the indicators in the system.

An ultrastable machine has the capacity to change its mode of response to the environment by correcting its own internal programs if feedback indicates that its scheduled mode of operation for variations in the environment produces unanticipated and undesired results. The lower animals have a freedom to respond to psychological considerations that is not possessed by machines. Human beings have a freedom to respond to intellectual and to moral considerations.

Two men may be said to differ in their degrees of moral freedom if one of them is incapable of adapting moral rules to circumstances and the other is capable of this. The former has lost the capacity to use negative feedback in this important area of activity. He thus may be said to have reduced freedom. The sociopath, on the other hand, adjusts to circumstances not by adapting moral rules but by disregarding them. He has lost his capacity for moral action and has thereby reduced his freedom in a quite different way from that of the moral fanatic.

In my usage, freedom is related to the capacity for and the quality of action of different kinds of systems. Freedom is related to the types and numbers of responses the system has available for any environment, to its capability to use negative feedback, and to its possession of ultra- or multi-stable capabilities.

For freedom to have meaning in a human context, it must refer to the freedom of human beings to act according to their best understanding of what a human being is. A drugged person is not free to analyze a problem, for an individual whose information has been severely restricted has lost the freedom to make significant intellectual or moral decisions. At its

deepest level, the understanding of human freedom requires a dispositional analysis. And this understanding will depend upon the facts of particular circumstances, particular societies, particular environmental conditions, particular available alternatives, and particular prospects for transforming those alternatives. Thus, our ability to understand the concept of freedom must be related to a praxical analysis.

Freedom thus has restraint and constraint as correlatives. As the quality of freedom becomes extended and complex and multifarious, so does the quality of the correlative system of constraints and restraints become extended and multifarious. The freedom of a ball to roll in any direction is dependent on its globular shape. The freedom to act morally depends upon a framework and a capacity for moral choice. Thus, just as the freedom to roll is inconsistent with a square or rectangular shape, so is the freedom to act morally inconsistent with immoral or amoral character or non-moral constitution.

Every freedom requires a set of consonant constraints. *These constraints are not merely limitations on the specified types of freedoms but are the very conditions for their existence*. That they are inconsistent with other modes of existence and with their particular freedoms, whether greater or lesser or of a higher or lower mode, is tautological. The quest for absolute freedom of revolutionaries and of anarchists is a romantic and illogical attempt to recapture infantile feelings of omnipotence. The quest for Godhead or for absolute freedom on earth is a disguised death wish, as was so clearly pointed out by Hegel. In the historical world, and even in the fantasy world of Superman, freedom is always related to constraint.

In part the confusions surrounding the subject of freedom stem from failures to distinguish between closed and open systems and among choice, prediction, and retrodiction. Every prediction related to a law or theorem is made in terms of a closed system. As Peirce pointed out, we cannot know that the laws of physics are not changing. The world system is open; our predictions are made within the framework of closed and bounded theories, models, or systems.

Knowledge concerning the world is always ineradicably limited. Knowing is always a stage removed from the known; the knowing self observes the known but is not itself known until it becomes an object of its knowing. Although any act of observing may itself be relegated to the realm of the known by raising the level of examination or of knowledge, there is ineluctably a metalevel, that of an active agent, at which one knows and is not known even to the self. At the simplest and most general level of the distinction between subject and object there is always a subject that is not itself part of the knowledge equation.

Although a subject may observe itself or be observed by another subject, it is brought within the realm of the known only recursively as it becomes an object for a subject. Thus, even apart from uncertainty principles and the problems arising from measurement error, the world is never completely knowable because its objectification is part of a recursive process in which the *known is a stage in a process of knowing*.

The freedom of a 'free' action depends on the choosing and not on the choice. Our awareness of freedom is an *awareness that accompanies the act of choosing*. This usage is not contradictory to the classical definition of freedom as necessity. However, the necessity that applies is that imposed by the choices that would be made by a rational moral actor in the circumstances in which that actor finds her or his self. My freedom lies in my ability to make the best and most moral choices in the circumstances in which I find myself. I desire to place myself in circumstances in which I can make reasoned choices that take my moral obligations into account. That is the freedom I wish to have. If I fall short of this, then, to that extent, I regard myself as unfree.

Part II
Analytics

4
Meaning and Logic

Formalism in mathematics, as is the case with logical positivism, rests on the supposition that analytic systems can be built on a purely formal basis without reference to the world of experience. This thesis, which is inconsistent with the complementarity of correlatives, severely understates the role of experience in forming theories.

For instance, the theory that perceptions are produced by sensations[1] itself stems from and depends on experience (Dewey 1925). Physiology reveals the inadequacies of naïve empiricism as surely as does epistemological inquiry. Because the pupil of the normal eye is in continual motion, no message, that is, signal or sets of signals, can present a stationary object as stationary to the eye. The input is transformed by the nerves that transmit it to the brain. And this statement can be confirmed by experiment. Thus, experience always requires the active participation of the perceiving system, the transceiver. Cameras can portray the world; they do not perceive it.

Meaning is a product of a transaction between a transceiver and a world; experience is not a simple or automatic display of incoming signals. The transceiver codes, or produces, data in transactions with referents within a milieu. In addition to interpreting sensory inputs, the transceiver also selects inputs that fit with the expectations, hopes, and fears of the system. Thus, for instance, it is perhaps less likely that the psychological mechanism of projection involves a selection of hostile data than that it involves a censorship of incoming data showing friendliness which might hinder efforts to build adequate defenses.

Thus, the processes involved in perception do not link a discrete coding element or sign to a discrete signal or signal pattern in any simple fashion. Stimulus–response theories, in which such discrete elements are assumed, may be good enough for a sufficiently stable world and a sufficiently

simple organism, or even for simple aspects of a more complex organism. But such a discrete conception of physiological coding reifies concepts, by appearing to give a color such as red, for instance, a meaning that is independent of the transceiver, the source of light, and the character of the referent. The correlative terms 'solid' and 'porous' also do not characterize as such, but only with reference to a transceiver and a context. The table is solid when I hit it, but porous to an electron.

There is no simple correspondence between a transceiver's implicit or explicit codes and external things, events, and processes. Indeed, external things, events, and processes are experienced only as interpreted phenomena. Beliefs about their character are formed and revised by implicit or explicit part-system analysis. *The difference between perceptual coding and linguistic coding is that the former is continuous, non-serial, and analog* whereas *the latter is discrete, serial, and digital. This is why linguistic coding is the source of logic, mathematics, and theory.*

Correlatives

The correlative pair is the basic unit of qualitative language. It bridges the transaction between the perceiver and the object, process, and arena of action or perception. It functions by means of contrast. For example, the contrast between light and dark produces meaning for a perceiver. It does not merely match a sign to an external datum as the English empiricists and the positivists believed. Instead, a correlative concept is mediated by a sign with respect to an aspect of experience, an application that involves a judgment and, thus, one that invokes other elements of the realms of knowledge.

Correlative sign pairs depend upon each other for their meaning. Their use produces clear conceptual distinctions, for example, 'light' or 'dark'. However, whether something is light or dark depends upon the context and a frame of reference that produces inner connectedness. It is not such *as such*, that is, things are not, in essence, either light or dark. Consider 'determinism' and 'indeterminism' in quantum theory. Quantum theory is indeterministic with respect to a particle's momentum or position, but deterministic with respect to the dynamic state transformations signified by the quantum equations.

It is not difficult to understand why language is correlative. The communication theorists have taught us that the bit, a binary element, is the smallest unit of information. The bit is a quantitative unit in computers and measures the distinction between one (positive) and

zero (negative). However, the sentence in which I make that claim uses qualitative concepts: for example, positive and negative. Their contrast permits qualitative knowledge. This is easy to see in pairs such as positive–negative, deterministic–indeterministic, and so forth.

Characterization requires contrasting concepts. They need not be binary in an analysis, but it is not surprising that they often are, for dichotomizing concepts are powerful. Locator terms, to be discussed shortly, permit finer distinctions in an analysis containing many (binary) dichotomies. They also function through contrast. Thus, for instance, when we learn to distinguish shades of a particular color, we do this by contrasting them to their neighbors. The discussion in this chapter of the relational character of knowledge operates through correlative axes that are used to characterize the objects, processes, or events that are the referents in experience of signs and concepts.

The argument that qualitative language is correlative is an assessment, not a deductive proof. Many of the subsequent discussions in this book will provide corroborating evidence that treating language as correlative assists in the assessment of philosophical problems.

Willard van Orman Quine's well-known argument against an absolute distinction between the analytic and the synthetic (Quine 1953, pp. 20ff) may hold because it is an instance of the correlative character of qualitative language. The analytic can be distinguished from the synthetic. However, no proposition is either analytic or synthetic *as such*; an issue to which I shall return.

Thus, correlatives are fundamental building blocks of language: pairs, the meaning of each of which involves the other. And often, as in pairs such as 'determinism' and 'indeterminism' or 'solid' and 'porous', the same real world entity or process can be characterized by either aspect of a pair, depending on the aspect of the world to which one is referring or the frame of reference.

Metacorrelatives

If correlatives are the basic units of language, metacorrelatives are employed in analyzing their use and significance. 'Sign' and 'signed', for instance, comprise a metacorrelative concept that is used in the production of meaning. For example, 'solid' and 'porous' are correlatives. They provide meaning. 'Solid' has as its referent a solid entity. The former is the sign and the latter is the signed. 'Sign' and 'signed' are metacorrelatives, for they raise the level of abstraction.

Locators

Locators, that is, terms that help us to locate an object, process, or event, are limited to only one aspect of a correlative pair, and they permit distinctions within that aspect of the correlative pair. For instance, the correlative relation between 'space' and 'time' is irrelevant to maps. If a correlative concept (for example, 'bright', 'heavy', 'finite', or 'analytic') exhausted the object or event to which it referred, we would not need locators. Locators function in a multiple, rather than a binary fashion. At least implicitly, paired concepts are used in language to determine meaning. Almost surely some highly practical determinant of language – perhaps the fact that paired terms are particularly powerful in clarifying types of meaning while locators function primarily within a typology and with respect to circumstances in which the influence of the polar elements is small – produced these differences. 'Types' and 'locators' are themselves metacorrelatives, and their meaning depends on their use.

Language and meaning

Let me now encapsulate the view of language and of meaning that has been presented. Certain kinds of words, signs that mediate concepts, enable us to characterize and to locate, in effect, *to create*, aspects of the objective features of the world. Sentences, expressions, and longer and more complex formulations are constructed according to rules that permit the particular meaning – as distinguished from the general meaning – of words to be understood within an exposition that employs a system of concepts.

Language has meaning because it uses signs to relate concepts to referents. Although some types of rules for its use, such as grammar, can be specified, many people can speak intelligibly without knowing many of the rules of grammar. Meaning depends upon a host of cues to which people have become acculturated. The meaning of a word may be tacit, but it is usually fairly commonly recognized, more commonly in specific subcultures and less so in the general culture.

Fiction and reality

To write that a unicorn met a lady is to write fiction, although meaningfully so, because we can specify the unicorn's characteristics even though there is no evidence of its existence. Moreover, a unicorn may not be a fiction in a fictional realm; that is, it satisfies the criteria

appropriate to that realm. An irrational number is not a fiction in the world of mathematics.

Perhaps some readers have experienced bright spiraling lines under anesthesia. When we say that they were 'tuning in' on a process that transforms sensory elements into perceptions, we do not mean that the formulas by means of which these processes can be characterized exist as 'things' in the human organism. But neither are they fictions.

Was Newton's theory a fiction? Newton's theory was displaced by that of Einstein. It was, however, a useful account of the cosmos. Newton's laws have been shown to be not fictional, but marginally incorrect within solar distances. From the standpoint of relativity theory, Newton's theory is an excellent analogy.

The foregoing statements require qualification. The appropriate application of theories treats their boundary conditions as if they are fully known. This assumption is a fiction, but a sufficiently small one in many, but far from all, cases.

Words and sentences

I agree with Quine that the meaning of an element, or a term, bears a relationship to the set, or sentence, within which it is used (Quine 1953, pp. 102ff). I agree with Hilary Putnam that terms in a sentence have a meaning that is independent of the sentences in which they are used (Putnam 1975, p. 52). At least I agree in part. I know, for instance, what I mean by 'eye', at least partly independently of a theory of vision or of particular sentences employing the term.

One need think only of 'eye of a needle', 'eye of a storm', 'human eye', or 'eye of a bee' to see that neither word nor sentence has absolute priority in the analysis of the meaning of eye. We do not know the more precise meaning of eye except within the sentence. And yet we cannot know its meaning within the sentence unless we already have an initial set of meanings of the word from which to choose, at least some of which depend for their meanings upon their contrasting characteristics. This is a part-system problem; and neither Quine's position nor Putnam's can be defended if pushed to an extreme.

Concepts and truth

The thesis that knowledge is circular because the danda determine the data neglects the process by means of which concepts are used. Concepts such as 'eye' are validated internally by definitions, for instance, 'receptor

for visual information', or externally by relations to concepts in another theory. 'Eye of the camera' and 'eye of human' carry with them, among other concepts, those of inorganic and organic respectively.

Concepts such as 'metal', 'mechanical', 'neurological tissue', and so forth, have meanings that are independent of the particular concepts, 'eye of camera' and 'eye of human'. Thus, they serve as external criteria for *empirical truth*: in this case, correct application of the concept. It is this interplay between 'inner' and 'outer' concepts and the use of part-system analysis that permits theory and empirical truth to be reconciled. And it follows from this that one may know, at least partly, the meaning of something without knowing how to apply it, for the external criteria may not yet be understood. And vice versa, for its meaning may not yet have been refined even though one knows how to apply it.

A theory is a *system* of signs, and the elements of a theory have meanings that depend upon their inner, that is, their within-the-theory, relationships. 'Mass', for instance, has at least partly different meanings in Newtonian and Einsteinian physics. And 'line', for instance, has at least partly different meanings in Euclidean and non-Euclidean geometries. The application of a theory to the world involves both inner meanings, meanings that are constrained by the system of signs, and meanings that are external, that is, that are constrained by other signs or systems of signs and the concepts they mediate; and, thus, ultimately by empirical, that is, propositional, assessment.

Signs and referents

The previous discussion leads me now to a brief examination of Gottlob Frege's position on sign, sense (that is, concept), and referent (Frege 1952). Frege was in error, as I showed in Chapter 1, in holding that the same referent may have more than one meaning.

Frege's distinction between a sign, its sense, and its reference contains hidden ambiguities. He argued that 'morning star' and 'evening star' have different senses, but the same reference: Venus. However, this independence of sense and reference is artificial, for Venus is the referent of 'Venus', and is a planet in the solar system, according to a first-order astronomical theory. The 'morning star', the 'evening star', and 'Venus' have not yet been related. This matter can be clarified only by a second-order analysis, that is, one that is neutral with respect to the different frames of reference.

The argument that the terms 'Venus', 'the morning star', and 'the evening star' have the same reference – the planet Venus – requires the

use of second-order discourse to correlate the sign systems of astronomy and of ordinary common sense. There is a correspondence in the meanings of the three signs in second-order discourse, but not in first-order discourse.

Einstein's theory of relativity accounts for differences in interpretation of first-order space-time phenomena by observers on different inertial systems. One of the remarkable achievements of his theory of relativity is to integrate seemingly contradictory first-order frameworks within a single set of second-order equations, a feat also accomplished in quantum theory. To use another example, second-order procedures make possible the translation of English into, say, Russian or Japanese. However, we cannot encompass the second-order reconciliation within a metalanguage that produces one-to-one relations between words and concepts. And this is the usual case. Chomsky's thesis of a deep structure, for instance, was always incompatible with the use and evolution of language.

We cannot say of Aristotelian logic and of Port Royal logics that one is right and the other wrong. Both provide new knowledge. But neither can be reduced to the other. As I will show in Chapter 6, we cannot say of general theories and systems theories that one form of theory is valid and the other invalid. These contrasting methods provide information that cannot be reduced to a single set of axioms, theorems, or essential rules. And that is why Carnap's thesis of positivism, which rests on universally applicable designations, is incorrect.

Logic and reality

Quine has been accused of having denied that there is a distinction between analytic theorems and synthetic propositions, or even of having failed to accept the existence of analytic theorems. Hilary Putnam, for instance, defended against Quine the utility of regarding 'No bachelors are married' as analytic (Putnam 1975, p. 52). I do not read Quine as having denied the existence of analytic theorems. There is, however, a question as to the conditions under which an analytic theorem is an empirical truth. Consider a culture in which all males are married at birth but remain bachelors in the sense of sexual access until the marriage is ceremonially consummated at the age of 13. The quoted proposition is not an analytic truth in that culture.

Even with respect to the form, however, Morris Cohen's argument – that if P, then P holds only if the P's are identical – is valid. That this is not a mere quibble is illustrated by the difficulty of programming

computers to read. How much variation in form can be permitted if the identity is to be recognized? That the human mind can solve most simple problems of this kind readily does not mean that no problem is present. "P's" do not exist as such.

There is both intension, that is, meaning, and extension, that is, examples, in these cases. P is only a sign. The problem becomes more complex when referents and concepts are involved, as in the 'blue-colored' example below and even more complex in more sophisticated problems.

I don't doubt the existence of analytic truths. They are the correlatives of synthetic truths. Although the meaning of each depends upon the other, there is a clear distinction between the concepts. Whether 'all blue objects are colored' is a logical truth depends on the inner relationship between 'blue' and 'colored'. 'All blue objects are colored' is a logical truth. It follows from the inner relationship between 'blue' and 'color'. That all blue objects are colored is true. But this last assertion of truth is not of logical truth. The judgment that the proposition is an analytic truth in this world – and possibly in all other worlds as well – depends upon external criteria that govern use and, hence, is its contingent correlative. Neither is such as such.

Logical truth invokes a world in which meanings are given and relationships are inner. A synthetic proposition invokes a world in which the relationships between referents and concepts depend also on external criteria. For instance, the theorems of Euclidean and of non-Euclidean geometry are logical truths. But the meanings of analogous concepts, such as 'line', differ in the two theories because of their relationships to other concepts. And differences in these analogous concepts are understood partly in terms of external criteria.

For a long time it was believed that astronomical space, that is spatial relationships, is Euclidean. Now it is believed that space is non-Euclidean. Although Euclidean geometry provides fairly accurate approximations within solar distances, it is not believed to be true of a more extended world. On the other hand, 'all bachelors are single men' may be a logical truth in some usages and not in others. (The arguments by Kripke and Putnam for *a posteriori* necessary truths will be considered subsequently.)

A more interesting argument – but also misleading and for the same reasons – is over which logical postulates are truly necessary. Take the principle of contradiction for instance. Is it true that something either is A or not-A? Rejecting that position may mean that it is like A in some respects and not like A in others. These contrasting uses are correlatives.

Which use should be employed in a particular case can be determined only by part-system analysis. The principle of contradiction does not apply in an *as such* manner. For example, Aristotle's division of the world into unitary and composite objects is problematic (see Chapter 2). And that is why Putnam's thesis does not hold.

In logic, the rules of the notational system determine what statements can be true. To determine whether a system is useful, its set of rules must be tested against experience. No set of general rules avoids problems. In Bertrand Russell's notational system, 'Santa Claus lives at the North Pole' is a false statement (Russell 1905). But surely there is a sense in which this sentence is true. As Linsky suggested, contrast it with 'Santa Claus lives at the South Pole'.

Frege's notational system avoids this problem but permits statements with empty names, that is, names without denotation (Frege 1952). The problem is obvious. Alexius Meinong avoids the problem of both Russell and Frege by holding that existence is not a quality (Meinong 1960). However, his notational system permits statements such as 'The circle is a square' and 'Bismarck has both a fat and a thin mother'. Because Meinong does not assert that a round square exists or that both mothers exist, he avoids contradiction. Bismarck may, in fact, have had a fat and a thin mother; she may have gained weight or lost it.

In this book we have seen that many apparently contradictory statements are not contradictory when properly interpreted in second-order discourse. Thus a table may be both solid and porous, depending upon whether with respect to a human being or a gamma ray. A sweater may be both yellow and green, depending upon the light. And Sirius may be moving with respect to the sun and the sun may be moving with respect to Sirius, depending upon the system from which the reference is made. What notational system works for a domain, or how it needs to be adapted to make it work, is determined by assessment at a literal level of analysis.

Systems of logic determine only analytical truth. According to formal logic, an antecedent, if false, entails the truth of any consequent. 'Franklin Roosevelt was queen of England' entails 'Harry Truman was the archbishop of Canterbury'. This particular type of entailment, which logicians call material entailment, is not what we mean when we assert that one aspect of the world produces another, such as 'When the sun rises, it will become day on earth'. We have no difficulty in distinguishing logical entailment from real world connections. And, thus, we have no difficulty in knowing when not to use logical entailment. Logic is merely a tool to be used. The failure of formal logic to deal with real world relations says

more about systems of logic than it does about the world. (For a powerful discussion of this topic see Blanshard (1962, pp. 127 ff)).

Once we move past the basic postulates of logic – and, to some extent, even within them – we can vary our use of language. But we do this legitimately only to elucidate aspects of experience. In effect, I reject formalism and all attempts to base logic on a single, correct axiomatic system. Although it might appear that my position then must be intuitionist, this is not the case, either. Systems of signs are merely tools for dealing with the signed world. I deny the existence in real time of infinite sets. One infinite set cannot be larger than another, although a segment of it may be larger than a comparable segment of another infinite set, for instance the set of numbers and the set of even numbers.

My critics thought my systems theories were positivistic because they thought I was emulating Newton's general theory. However, even had I pursued a general theory of social systems, that would not have made me a positivist. Carnap's logical positivism does not rest on general theory. It rests on designations that are invariant. Kripke and Putnam thought they could restore this position through their thesis of rigid designation. I will show, as did Linsky, that this attempt fails.

Curiously, the recent thesis of critical realism, which is viewed as an alternative to positivism, seems to rest on an approach to designation similar to the one that Carnap championed. If ontology, rather than being the correlative of epistemology, has independent meaning, then Carnap's thesis of logical positivism would hold.

Dialectics

Recently there have been attempts to formalize dialectical logic in both the Greek and Marxian senses. The classical Greek usage, in which dialectics involves the use of arguments generally believed to be true, is not inconsistent with the positions taken in this book. But Marxian dialectics is.

Some of those who have attempted to formalize dialectical logic have also attempted to justify the use of negations of negations and the appropriate non-use of the principle of the excluded middle. Although the following is not an instance of what a Marxist means by a 'negation of a negation', it is easy to see that 'he is not unintelligent' is not the same as 'he is intelligent'. The Marxian concept of a negation of a negation is as metaphoric as arguing that 'He is not unintelligent' is a negation of 'He is not intelligent'. In such sentences, the negation of a negation is a metaphor.

The problem is that most Marxists have turned analogs into verbal magic and employed them in the absence of that literal analysis that alone makes concepts applicable to a particular case. There may be phenomena to which the metaphor 'negation of a negation' may be partly applicable. Conceivably the concept may have some heuristic value in orienting one to the possibility of reversals in the real world. However, scientific knowledge is transmitted by analytical, that is, literal language.

I suspect, although he wrote in too packed a way for one to be sure, that it is this error that underlies Jürgen Habermas's concept of dialogic[2] as well as some hermeneutical analyses.[3] These metaphors are more dangerous than those that give rise to the paradoxes of class or language discussed by Bertrand Russell and Alfred Whitehead (1910, Introduction and Chapter 2) and Alfred Tarski (1956), to which I now turn; for the Marxian metaphors pile uncontrolled use on top of uncontrolled use. Formalization of a concept is not a sufficient, or even a necessary, condition for controlled use. It is an understanding of the dialectical relations between the formal and the ideographic aspects of a problem that permits controlled formalization and application.

Levels of language and types of proposition

The previous discussion complements Tarski's concept of 'levels of language'. A sign always has a possible referent, even if the referent does not exist as an experienced event, object, or process. In principle, a sign is non-self-referring in its function as a sign, although by reflexive, that is, recursive, use in a metalanguage, that is, a language in which the prior language is discussed, it may refer to itself in its signed aspect; but, even then, only formally.

When a sign is used recursively (i.e. in a metastatement, as signed), it becomes the referent of a formally identical sign but not of itself. Thus, the metastatement may be a metaphor, an analogy by proportion – 'x' as a sign is to x as signed as 'x as a sign as signed' as a sign is to 'x as a sign is to "x as a sign" as signed – if x as signed is not identical to, for example, "x as a sign"as signed'. There is often a significant shift in meaning as signs are used recursively in an argument. Whether this is the case is a factual matter in which external criteria are employed.

In mechanics, an area in which independent measures and covering laws exist, a proportional equation is literal, at least in a correlative sense, because, *for all practical purposes*, the measures are independent and common, *at least up to some limit*. However, the problems addressed

by Tarski's concept of levels of language and Russell's theory of types are not literal, even in a correlative sense, when their use of signs is correctly analyzed.

Thus, if the only sentence on a blackboard is 'The first sentence on the blackboard is false', it might appear to create a paradox. If it is true, it is false. If it is false, it is true. However, if the sentence is treated as a sign system, no paradox ensues. The sentence is neither true nor false, for there is not a properly constructed referent. 'The first sentence on the backboard' is not a proposition. Calling it 'false' completes the sentence, and, therefore, can refer neither to the previous words nor to the complete sentence. However, a second sentence, 'The first sentence on the blackboard is true', is neither true nor false. For it to be true or false, the first sentence on the blackboard would have to make a claim that can be true or false. And it does not do so.

Consider an envelope paradox: 'The next sentence I am going to write is true', followed by 'The previous sentence is false'. This is a variant of Tarski's level-of-language problem. It has implications that bear on my earlier discussion of logic and reality. In the standard case, the second sentence or sign system would have a signed referent that is the indirect referent of the first set of signs. The paradox arises because mutual implications of the envelope type are not restricted in this system of logic.

I am not arguing that this is necessarily true of every Gödelian-type problem (Gödel 1934). Kurt Gödel's conclusion – that for any mathematical system at least as complex as arithmetic, there are true propositions that cannot be proved within it – is still uncontroverted. By incorporating information from part systems not included in the system of logic that produces the paradox, we can see that a restriction on mutual implications is required in the envelope type of argument. The logical system must be adapted to the realm of knowledge, not vice versa. Would it be a problem if the second sentence on the board read, 'The previous sentence is not the first sentence'?

Consider Russell's problem: the class of all classes that are not members of themselves (*Principia Mathematica*, Introduction and Chapter 2). Is it a member of itself? If it is, it isn't. But if it isn't, it is. This, however, holds only if 'sign' and 'signed' are identical. It is a member of the class in its signed aspect, but not as a sign. If the sign and the signed are not identical, the paradox does not arise.[4]

Many statements at different levels of language that appear to be true turn out to be metaphors when the distinction between sign and signed is assessed. Even in mechanics, the meaning of measurements

that appear to be entirely literal and concrete can become metaphoric. As Max Born proved, a sufficiently long series of predictions becomes indefinite because there is no such thing as an absolutely precise measurement (Born 1962, p. 49ff).

Kripke, Putnam, and 'necessarily true' definitions

More than eighty years ago, Morris Cohen argued that definitions are not arbitrary, that elements of definitions are factually connected: refined sugar, for instance, is 'both white and sweet', because these elements are connected in this way (Cohen 1931). Saul Kripke (1963) and Hilary Putnam (1975), however, argued that true definitions are necessary and true in all possible worlds. This position is ultimately related to Kripke's rejection of connotational meaning for common and personal names. Personal and proper names, according to Kripke, are rigid designators de re in all possible worlds, that is, they refer to things as they are in themselves and not as they are de dicto, that is, from a particular point of view. Thus, Aristotle would be Aristotle even if Plato had not been his teacher and gold would be gold even if it were not yellow. We may be mistaken that gold is yellow, according to Kripke, but scientific analysis will clarify that problem.

Kripke, thus, believed that there are no ambiguities of scope in modal logic. Leonard Linsky has shown at length why this position fails to hold.[5] For instance, in modal logic, if it is true that 'Sir John wants to know whether Hesperus and Phosphorus are identical', then 'Sir John wants to know whether Phosphorus is identical to Phosphorus' is also true. But it is clearly false that this is what Sir John wants to know. Hence, as Linsky properly noted, sense *is essential to designation.*

The concept of rigid designation in all possible worlds is too restrictive. Should Socrates have suffered brain damage as a child, would he still have been Socrates? Is the man the boy? The tree the tender shoot? What does it mean to say that two electrons are different electrons or that one electron at one time is the same as, or different from, that electron at a different time? When an amoeba splits, are both the new and the old amoeba the former amoeba? Is a second personality of a schizophrenic the same person as the first personality, or a different person? In what sense would Aristotle remain Aristotle in all possible worlds if no de dicto elements are specified? Suppose his parents had been different? His language? If he had not been a philosopher? What does it mean to say Aristotle is Aristotle in all possible worlds de re? How do we determine what is de dicto and what de re?

Designation always implies some connotative elements, if only to clarify that we are pointing to the same thing. The concept of designation in logic is egregiously underdetermined and *covertly borrows the concept of sense*. Understanding sense and pointing, re-understanding sense and re-pointing, and so on are correlative techniques. Neither can be eliminated. And neither has priority. And each evolves dialectically as knowledge advances.

The difficulties in the position of Kripke and Putnam are even more profound than Linsky asserted when he argued that their position requires logical and metaphysical omniscience. Omniscience is no more meaningful in a world in which qualitative concepts are correlatives than is treating infinite sets as existential. Wittgenstein's language games approach makes an analogous mistake for it depends upon designations that are independent of evolving world views.

In an earlier section of this chapter, I pointed out that a statement may be a logical truth even though the assertion that it is a logical truth is not a logical truth. I shall use this mode of analysis now to show why the claim that a definition, if true, is necessarily true misstates in principle the ways in which we can know and speak about the world. It likely is a similar mistake that leads to the Absolute in Hegel and to Peirce's claim that the meaning of an object depends on the use that is made of it.

A logical truth is necessarily true as a consequence of internal criteria, but the assertion that it is empirically true, that is, that it applies correctly to a real world domain, depends also upon external criteria, that is, upon criteria from other part systems or domains.

The crux of the sleight-of-hand by means of which Kripke and Putnam seemed to satisfy their claim lies in their illicit use of the 'if true' stipulation in a context in which its meaning has varied. We have seen how variance of meaning affects Russell's type problem and Tarski's level-of-language problems. Does the stipulation 'if true' overcome those difficulties? Or is this characterization of 'true' different from the logical 'true'? The problem is whether logical truths, if true, become truths as such, and hence metaphysically necessary, or whether they function as correlatives in characterizing aspects of the world.

Consider tautologies in which a substitution occurs in one of the elements of the tautology. For instance, for mammal → mammal (if mammal, then mammal) substitute dolphin → mammal. Or take a definition: water = H_2O. Here, Kripke's and Putnam's position requires rigid correspondence between the elements of the proposition or definition, a correspondence that is neutral and independent of all contexts and frames of reference. Putnam's argument to sustain this position rests, in

addition, on the use of extensional logic, which gives absolute priority to the independent use of signs.

The preliminary answer to Kripke's and Putnam's claim, however, is that 'sentence' and 'words' are correlatives and that neither can take absolute priority over the other. The importance of the sentence as the context of the signs has been confirmed repeatedly by experiments that show that an isolated word that cannot be understood when it is heard alone can often be understood when the other words of the sentence in which it occurs are heard. The earlier example of 'the human eye' and 'the eye of a storm' are evidence of the role of context in interpreting signs. Thus, the meaning of 'truth' in 'truth table' and in 'truth of theory' are not the same. Perhaps, though, Kripke and Putnam would answer that the types of eye need to be distinguished a posteriori and that the correct use of signs would permit their rigid designation. Let us, therefore, carry on the analysis.

If, as Kripke argues, a table is not the same if it has been replaced by an identical duplicate (and how could this be known unless the substitution were observed?), what does it mean to deny that they are the same? Heraclitus argued that a river is never the same river, for different water is flowing. Most of the cells in the human body are replaced in seven years. Is it then the same body? What does 'same' and 'not same' mean in these examples?

'Same' and 'not same' are correlatives, not truths as such. Something may be the same in one frame of reference and not the same in another. Second-order discourse eliminates the apparent contradiction. The river may be both the same and not the same, depending on the *frame of reference*. The body may be the same with reference to form and genetic characteristics and different from the standpoint of cellular material.

Just as the 'as such' concepts of 'changing' and 'unchanging' or 'same' and 'not same' are reifications, so is the idea of rigid designation or correspondence as such. Consider 'yellow'. How did Kripke handle this problem? Kripke argued that yellow is a manifest, and not a dispositional, property because if we had different neural structures, all this would mean is that yellow objects would not produce yellow sensations in us (Kripke 1972, p. 326). (But no one ever had a yellow sensation. We see yellow objects.) Yellow is a product and what becomes manifest as yellow depends on the lighting and the transceiver as well as upon its source. Furthermore, there are shades of yellow.

Can we resolve this problem by resorting to physics, as Kripke attempted to do with the problem of molecular motion? Suppose we define yellow by an angstrom number. But there is no yellow in physics. And, if we change the optic system, the angstrom pattern will no longer

produce yellow. Is this difficulty perhaps why Kripke conceded that molecular motion may not be heat de re: because molecular motion might not produce heat in the physiological system? Nevertheless, he thought that this rigid relationship exists and said that 'molecular motion is molecular motion' in all possible worlds (Kripke 1972, p. 274, fn. 71). However, molecules and motions are also products, and we are no better off than with yellow; for what counts as a molecule and what counts as motion is not entirely independent of transceivers, context, and frame of reference, and thus upon meaning in some respects. In any event, what varies with what is the rate of movement of atomic particles with temperature on a Kelvin scale.

I must admit that I do not know why Kripke regarded yellow as manifest de re, whereas he said that it is possible that heat is de dicto. The transactions that produce angstrom wave counts and temperature readings involve transactions with laboratory transceivers, whereas the experience of warm and yellow involves transactions with physiological transceivers. Angstrom waves are inferred entities, and degrees of temperature, or heat, are inferred quantities. Their meanings are not entirely independent of the range of transactions and of the theories that permit their existence or character to be asserted. However, angstrom wave production and color are not rigidly related, nor are heat production and hotness. The same temperature is sometimes perceived as warm and sometimes as cool. 'Hot' and 'heat' are different concepts.

Would we not immediately spot something wrong if it were argued that human motion is human motion? However, what counts as human motion? A corpse's motion? A reflex? An intended motion? These questions have no answer as such; they can be answered only within the schemata of investigation and the problems to be solved.

Consider a well-known theoretical identity: water = H_2O. This definition is permissible (1) because by experiment we can show that two atoms of hydrogen and one of oxygen will result when water is vaporized, and (2) because we will refuse to call anything water of which (1) is untrue even if it looks and behaves like water.

Hilary Putnam used the same example, H_2O, to attempt to make Kripke's point. If in another world, he wrote, people drink a substance that is not H_2O, it is not water. 'Once we have discovered that water (in the actual world) is H_2O, nothing counts as a possible world in which water isn't H_2O' (Putnam 1975, p. 233).

This, he said, is a logical and metaphysical, even if not an epistemic, necessity. Whereas Kripke retreated to physics, Putnam refused to count as a possible world one in which water is not H_2O. Neither position withstands analysis. If we ask on what grounds the definition of water

can be restricted to H_2O, the somewhat different stances of Kripke and Putnam will be seen to have a common defect.

If liquid H_2O in a given world will not satisfy thirst, is it water? Below freezing, is H_2O ice or water? Consider 'The body was encased in a block of water'. Solid H_2O and methane are both ice, but solid gold is not. Gold is a metal, but two atoms of gold do not constitute a metal. The relevant distinctions depend not merely upon physics or chemistry, but also upon meaning, and the frame of reference. There is no single frame of reference that serves as a foundation for necessary meaning.[6]

Necessity, in Kripke's and Putnam's thesis, is imbedded (1) in the structure of the logic of a theory, (2) in a decision to give priority to a particular theory, usually physics, and (3) in a decision to let (2) determine the use of names. However, either we can call both U_{235} and U_{238} uranium or we can designate them differently, depending on their atomic structure and on the purpose of the distinction. There is no necessity here, even though Kripke and Putnam draw their best examples from strongly ordered aspects of the world. The truth of a theory as a frame of reference and of the identifications within it are always dependent on assessment. A theory is never true as such. Neither are identifications.

The problem inheres in the important differences of meaning between the concept of truth in logic and the concept of truth in science. To call a theory true is not merely to make an epistemicaly fallible claim. It cannot be a fully determinate claim. It will always be based to some extent on external criteria that justify it in a specific domain, but that do not necessitate it. And the necessity of its internal logic is always bounded by this correlative non-necessity. Kripke and Putnam offer no arguments for inferring from the identity of the two signs 'truth' – the analytical and the empirical – the identity of the concepts and of the referents the signs mediate. This begs the questions of how language works and of how the world is ordered.

Quine's remarkable paper on the defects of empiricism and his other paper on translatability are driven by the former distinction. For reasons already given Kripke and Putnam are incorrect on the subject of logical truths. On what basis can they know what every type of possible world is? They no more can know what a logical truth necessarily is than Wittgenstein can know what a family of games is apart from comparing their pragmatic similarities and differences.

The foregoing objections to the thesis of Kripke and Putnam are formidable. Thus, it is not necessary to show whether their thesis implies, as I think it does, that a *theory* of the world is possible in principle. Such an implication would be inconsistent with Kurt Gödel's famous proof of the incompleteness of mathematical systems at least as complex as that

of arithmetic, Isaac Newton's critical claim that initial conditions are contingent from the standpoint of the theory being applied, and Niels Bohr's complementarity principle. We may someday discover that one or all are wrong, but there is no contemporary reasonable ground for believing that to be the case. And each has metaphysical and ontological implications that are inconsistent with the thesis of Kripke and Putnam and consistent with the position of this chapter.

Furthermore, the concepts 'weight of evidence', 'confirmation', or 'falsification' have no algorithmic determination. There is no necessary order to definitions, theorems, and undefined terms in theories. Thus, what is defined within 'true' theories – hence, rigidly designated, according to Kripke and Putnam – can vary with conventional differences in the construction of a theory.

My analysis also is not necessary, for it rests on part-system analysis and assessment. That does not mean that it must be therefore doubted, although any position this complex merits doubt. However, to clarify this distinction, take two sentences: 'It has rained somewhere sometime on earth' and 'At least one sentence in this paragraph contains more than three words'. No sane person will doubt the first sentence, even though it is possible that our earthly life is only a dream. And discourse is not even possible unless we accept the truth of the second sentence. Yet we know that people who speak gibberish seem to think that they are communicating; and so perhaps our communication is merely gibberish. Although we cannot reasonably doubt either of the two sentences, they are neither necessary nor logical truths.

There are natural kinds, that is, there is some sense in which the character of the world determines the classifications that are applied. But I do not mean by the term what Kripke and Putnam do (Kripke 1963; Putnam 1975, p. 233). Thus, where the line is drawn between classifications of beings, for instance, depends upon frame of reference. If the hypothesis of punctuated equilibrium of biological evolution – according to which biological structure is highly resistant to change except when stressed beyond its capacity – is correct, species, as defined biologically, would not change gradually and competitive selection would be between species. The evidence seems to suggest that gradual evolution applies to changes in single-celled organisms and that punctuated equilibrium applies to changes in more complex organisms. But the biological framework of reference is not the only framework for classifications. Distinctions can be made according to types of responses to the environment, and beings can be grouped according to whether they are capable of rational behavior, moral understanding, and certain levels

of intellectual accomplishment. These groupings might not be compatible with different frameworks, but they would be just as objective as biological designations. Similarly, 'carnivorous' and 'herbivorous' are classifications that overlap species.

The type of simple but inadequate natural kinds in which Kripke and Putnam believe can be avoided by second-order analysis without giving up the concept of natural kinds, provided that one recognizes the *limited contexts* in which such designations can be used.

In a subsequent section, I shall explore the problem Kripke gets wrong in his discussion of yellow: the correlative character of the definitional and the dispositional. Whether one or the other governs is not an as such matter but one of frame of reference.

System and process

The concepts 'system' and 'process' are correlatives. Thus, the decision to use either of the concepts depends on the context and the purpose of analysis. A system consists of its static elements. Process consists of the regular changes that functions produce in a system.

The sun, for instance, can be defined in more than one way. It can be defined as a luminous heavenly body. It can be defined as the element in the solar system that heats the planets that circle it. It can be defined as a body the heat of which is produced by the process of internal fusion and contraction. We can specify a number of experiments that will permit us to identify the orb in our particular solar system as a sun according to these definitions. Thus, we can employ multiple definitions in identifying systems or entities. A sun is a luminous body that provides heat to the planets that encircle it, and so forth. An ox is a quadruped, horned, cloven-footed, ruminant, and so forth, animal.

However, we can also study the sun or an ox in terms of their internal relations as these relations change. The human body may be subjected to a physiological analysis that is similar. We can study the body either as a system of parts related to each other in a static fashion or as a process involving growth and decay. The body is both system and process; and the two modes of analysis are complementary. Statements about the body as system do not contradict statements about the body as process; they have different referents. Either system or process may be dominant, depending upon the questions that are asked. And the two modes of analysis differ, even though both employ definitions. Thus the heart of an ox is an organ, and so forth that, in relation to the lungs, and so on, has the following function in producing, and so forth.

Definition and disposition

Some concepts cannot be treated strictly definitionaly, but only contextually and in complex conditional form. For instance, the term 'electric charge' means, among other things, that if one body is placed near another body and is attracted by that second body, then it possesses an electric charge. The ensuing electric current can be inferred from the heat produced in a conductor, the deviation of a magnetic needle, the quantity of a substance separated from an electrolyte, and so forth. Thus, the concept of an electric current cannot be reduced to any one set of terms nor can it be measured simply by measuring a temperature. *This is what I mean by a dispositional concept. And it is integral to understanding the relationship between human nature and moral choice.*

Dispositional concepts are necessarily employed when the interdependence of the element under consideration and its environment is great. However, this is merely the polar end of a series rather than a dichotomous usage. All manifest properties are products from one point of view as, for instance, the disposition of a type of optic system to produce a perception of yellow when a referent and light source produce given angstrom patterns. That is, they are dispositional in some respects. And all dispositional properties require reference to manifest properties if only to register their production: electric current, heat, and deviation of the needle, for instance. Concepts such as 'definition' and 'disposition' are correlatives. Neither can be reduced to the other, and part-system analysis enables us to deal with them.

Although 'electric current' is a dispositional concept in the area of mechanics, it is indicated on instruments that are considered to operate virtually independently of context. The manifestation of yellow, on the other hand, depends on the conventional standard of sunlight, the chemical composition of referents, the angstrom pattern, and the normal optical transceivers of the human body. Variance in any of these, including the use of filters, would result dispositionaly in a different manifest color. Rational and moral behavior are produced dispositionaly and there is much greater variance, depending on context, than with respect to color. This is critical to considerations of justice.

One of the striking results of von Neumann's development of game theory was the recognition that *what is rational depends upon the framework within which it is analyzed*. Rationality is an extremely strong concept – that is, the criteria that define it are strong – in a situation such as the prisoners' dilemma, in which strictly rational independent behavior

produces the worst joint outcome. It is a weaker and more restricted concept in the zero-sum game. The criteria for rationality are weaker still in some other types of games. When one turns to asymmetric bargaining games – that is, games in which the maximal outcomes for the players are different and in which they must agree on p, which stands for the proportion of his maximum that one player gets, if the other player gets 1 – p of his maximum – it is questionable whether a strategy pair can be picked out as rational, that is, whether there are adequate criteria for defining rationality in this context.[7]

Thus, when we try to analyze what we mean by a human being, our concept of it will depend upon how we structure the analysis and the context that we take into account. A mere examination of what individuals do in specific circumstances provides one framework of analysis. An examination of what they do under a variety of social and environmental circumstances provides another mode of analysis. An analysis of how they attempt to transform their environment in order to transform their alternatives and of how these attempts to change the environment differ in different societies requires still another framework. If we ask what capacities and dispositions they must possess to respond in these ways, we are at a still different level of analysis.

The comparative analysis of different but similar types of systems also can be helpful. We can learn about human thinking and intelligence by contrasting computer models of computation and problem solving with human thinking and problem solving. We can learn more about human emotions by contrasting different theories of emotion with each other, for instance, Aristotle's, the James–Lange theory, and cybernetic or information-control theories. Such inquiries can also inform us, to some extent, about the interaction between different 'housings' – biological in humans, electronic and metal in computers – and their related processes of thinking and problem solving as well as the subjects to which they are directed. In all these ways, we penetrate more and more deeply into the whatness and the meaning of humanity by means of scientific methods of theory and praxis.

Pragmatistic tests

The structure and differentiation of concepts depends not upon abstract conceptual analysis but upon the need to make distinctions that are important in the investigation of problems.

Thus, if we wish to investigate what we mean by 'courage', we can do this best not by conceptual analysis but by contrasting varieties

of behavior under different conditions. We may contrast the courage required to protect a family from assault by a bandit, the courage to fight for one's country in war, and the courage to think differently, to choose three arbitrary examples. Yet may it not sometimes be more courageous to surrender to the attacker and to limit the damage to one's family? And may it not be foolhardy, on going into battle, to begin a debate about the appropriate technique of attack?

With the aid of examples of this kind, we distinguish courage from foolhardiness or rashness. We may learn that what appears to be courage is really cowardice: the preference for avoiding the appearance of cowardice regardless of the cost to others. We refine our concepts not only by analyzing them conceptually but by weighing them against the richness of the world. We learn that certain forms of moral behavior produce better people and better social conditions under existing historical conditions, but not necessarily under all.

The virtues that produce an integrated personality in a medieval society and those that produce an integrated personality in a modern society may be quite different. The values these virtues embody cannot be placed in any simple hierarchy, for their relationships with each other and with historical conditions are highly interdependent. Even the complex of values that are judged to be best because they produce the best people under the best possible conditions of a society will not be best in all sectors of the society or in all situations that arise within each particular sector.

To say that some values are more important than others does not mean that the less important values can be derived from the more important values – no system of logic will permit this in a way that accounts for actual experience – but that they will play a more important role in a class of situations or even in particular situations. Thus, one may lie to save one's brother from the secret police if he is merely a dissident, but not lie to save the brother if he will convey important information to an evil enemy nation. On the other hand, one may send secret information to the enemy to save one's mother if the information is unimportant or if one's society is not worth preserving. There is always a rich interdependence with other elements of the factual order in these judgments. If we believe that people are by nature selfish – that is, that except under restrictive conditions they will tend to act in their own interest against the public interest or the social good – then we would regard hypocrisy as a virtue, for the wise would be hypocritical and only fools would be taken in by claims to the contrary. Even so,

truth-telling may be a virtue, in some situations, even for such selfish and hypocritical persons.

Whatness is revealed by the widest variety of testing possible: a variety that distinguishes between first-order and second-order types of statements and that reveals the dispositional shifts in both the meaning of terms and their relationships.

5
The Nature of Reality as Illuminated by Quantum Physics[1]

Chapter One emphasized that names relate concepts to the world of referents. Theories are complexes of names and they function in the same way. The uses of names change as knowledge of the world progresses. Einstein's theory of relativity could be used because physicists knew how the names in the theory applied to the world of referents.

The puzzle that upset Einstein with respect to simultaneity could be investigated because he possessed a world view within which he knew what entangled photons were and he could measure how they moved. Thus, it was possible to show that widely separated events on earth's inertial path nonetheless had a constant relationship to the moving entangled photons

The way in which the signs in a theory relate concepts to the world of referents is also relevant to how theory develops. When Einstein reflected on how relativity theory might work, he used an analogy related to how signals are received from moving objects such as trains. Contrast this with theories that propose wormholes. Wormholes are analytical constructs that cannot be related to experience. Unlike entangled photons the paths of which can be determined, there is no method for determining what a wormhole is or where it is. The theory is a purely analytical construct unrelated to current empirical knowledge.

Although the world cannot be definitively described or understood, there are things that can be said that illuminate our understanding of it or of its characteristics within the framework of our current world view. However, some of those things, such as the character of space-time or particles, are less accessible to ordinary common-sense than is commonly believed. In the course of the analysis, I shall examine what

led Erwin Schrödinger to his quantum cat thought experiment and show that it is his treatment of theoretical notations and formalisms that produced a result that he himself doubted.

This chapter employs terms such as first-order and second-order in a way that is different from the usages of physicists in which theories are first-order and the world of experience second-order. Both relativity and quantum theory raise significant questions about the character of the world of reference. According to relativity theory, the first-order determinations of observers on each of two different inertial systems will establish correctly, but with apparent paradox, that time lengths are longer on the other inertial system. That relativity theory is correct in this regard is supported by the fact that the decay times of particles that enter the earth's atmosphere from outer space or that are accelerated in particle chambers are slower than the decay times of the same type of particles when they are at rest with respect to the earth.

Observers on independent inertial systems will nevertheless agree on their second-order determinations – that is, the determinations that follow from relativity theory, which constitutes a neutral second-order frame of reference for them. Both will use relativity theory to determine that their first-order determinations from their respective inertial frames of reference are mirror images.

There is no paradox in the former claim, for time and space are not independent realities but relationships of things, the space-time evolutions of which are represented by world lines (the path of an object in space-time). Consider the case of the fabled twins one of whom travels to another star system and returns. The travelling twin had to accelerate to leave the solar system and he had to accelerate to return to it. The twins now inhabit a neutral frame of reference, in which their first-order and not merely their second-order accounts of reality coincide. Each agrees that the twin who flew into space is younger than the twin who remained home. Many other proposed puzzles evaporate in a similar way upon analysis.

The so-called quantum puzzles ensue from the interpretation given to the deterministic wave equations, which supposedly collapse when the experiment is carried out. For instance, some experiments produce results that would be produced by waves. Other experiments produce results that would be made by solid bodies. Many physicists incorrectly believed that observations produced these differences.

Schrödinger used hermetically sealed chambers for his quantum cat thought experiment in order to filter out the supposed effects of

observation. He proposed a hermetically sealed physical apparatus which would prevent any influence of what he regarded as subjectivity. The experiment included a cat, a quantum device involving radioactive material that would or would not release a poison that would kill the cat, and an outside observer. According to the then common understanding of quantum phenomena as dependent on observation, the cat is neither alive nor dead until the capsule is opened and it is observed.

Max Born repeatedly, and correctly, pointed out that the different results related not to the minds of observers but to the experimental conditions in the standard quantum experiments. I later proposed a modification of the thought experiment. Put a camera and clock inside the capsule. If the poison is not released, the cat will be alive when the experimental container is opened. The camera recording will show that the cat always was alive, and it would be unreasonable to believe anything else. If the cat is dead, the camera will show the release of the poison, it will record the time, and an autopsy, at least roughly, will verify the time of death; and it will do so even in the absence of the internal monitoring devices.

Thus, despite the hermetic sealing of the experimental chamber in the quantum cat experiment, the outside observer knows that the cat is either dead or alive, whereas the photon has a definite position, momentum, polarization, or dominant or field aspects *only in the context of* a relevant experiment or real world situation. Furthermore, in the quantum cat case if the observer knows the probabilities with which the quantum device will emit the poison, he also knows the probabilities that the cat is dead or alive. Thus, in these respects, this problem does not differ from ordinary problems of physics.

What is meant by the collapse of the wave function? The equations of quantum theory constitute what physicists call the wave function. When the theory is applied, only a single set of events is produced. Only one of the possible multiple consequences of its application is invoked. This is what is referred to as the collapse of the wave function.

In the first place, the wave function is the sign set. It is not the world. When observers on independent inertial systems say that time lengths are longer on other systems, there is no collapse of Einstein's relativity theory. There is an application of the theory to two different inertial systems. When quantum theory, that is, the sign set, is applied pragmatically, there is no collapse of the wave function. Many quantum physicists mistakenly have identified the sign set of quantum theory with its applications. They have no basis for asserting that individual particles are simultaneously in a state of decay and non-decay until observed upon the basis only of the notational elements of the theory.

John Archibald Wheeler created a similar problem with his 'many worlds' hypothesis. Because quantum theory projects a range of outcomes, Wheeler assumed that all the potential alternatives to an actual result exist in other worlds. But if we toss a coin, we do not assume that all the other possible outcomes of the probability distributions that theory projects for a large series of tosses have gained existence in separate worlds that have branched off from ours. We see that the result is unique to the particular toss.

The actual coin toss does not exist as part of a real distribution that it invokes. It is a unique pragmatic product of a unique toss to which the probability theorems are applied. The theory is composed of *names and numbers*. It is not composed of sense-related coins or human tossers of coins. When the theory is applied, a particular laboratory event occurs the consequences of which are determined by the relevant theorems and the initial conditions of the relevant experiment.

In the absence of experiments or real world events, there is only a potentiality for any of the range of outcomes. The wave equations of quantum theory state the probability structure that will attend the results of pragmatic experiments. Recognition of the complementarity of theory and pragmatic application resolves the difficulty Eugene Wigner told me he found in Wheeler's 'many worlds' hypothesis: 'You can't do anything with it'. It confuses a theorem with a real world sequence of events in an actual experiment.

When quantum physicists refer to the collapse of the wave function, they fail to note that empirical knowledge is transactional. Red, for instance, does not exist as an independent reality. If our optic and neurological structures or the characteristics of the sun or the environmental context were different, red would not appear to be red. It would have the same wavelength. But wavelength itself, in turn, conceivably could be something else if we possessed different theories, apparatuses, and sensory organs. Thus, there is no absolutely privileged frame of reference and no identity between the language used and the reality observed or described.

We designate particular sets of relationships between transactors and referents – humans perceive red and green and dogs do not – because we know from everyday life how transactional context affects phenomenal knowledge. Red and green do not exist as such for us, even at the human level in ordinary daylight. We can make finer distinctions as our conceptions of color are expanded by training.

The collapse of the wave function appears mysterious because we fail to understand that we have taken boundary conditions for granted.

Thus, we are mystified when they become relevant at the quantum level, where theory leaves them out of account.

It is important to detach the concept of realism from that of verisimilitude. For instance, we can construct a physical model of a solar system or an analog computer model that employs the laws of physics and that is programmed for initial conditions that correspond to the inferred locations of the planets in the physical model. We can then compare changes in both with astronomical measurements. There is no direct comparison between the models and the solar system. The correspondences have meaning only within a specific second-order frame of reference.

Perhaps the issue can be made clearer by moving to examples that are not as simple, as determinate, or as strongly ordered as in macromechanics – examples that show how the correlative character of qualities fits the account that is being offered. *The position and the momentum* of particles cannot be measured in the same experimental situations, for measurements of position require rigid instruments and measurements of momentum require instruments with moving parts. Note that 'moving' and 'rigid' are correlatives. Neither is such as such. This is true also of 'position' and 'momentum'.

The belief that position and momentum are inherently independent features of the world imposes on them a metaphysics of *verisimilitude*, a thesis that applies to unitary, but not to compound, objects in Aristotle. Recognition that waves and particles (more accurately wave-like or particle-like results) emerge in different experiments led to an incorrect interpretation of Bohr's Copenhagen doctrine: that it is subjective or even that it depends on *observation*. However, as Bohr's close colleague, Max Born, stated repeatedly, the slit experiments relate the production of waves and particles not to qualities but to differences in experimental tools. They are objective products of inquiry. They are not independent features of the world. Born was right but not influential with respect to this issue.

As a result of a failure to accept Born's correct interpretation of Bohr's thesis of complementarity, two incorrect philosophical positions are dominant. One essentially is positivistic and it attributes to theories, in principle at least, a verisimilitudness that may be approached (but not reached) if only with respect to general theories to which common measures apply. The other adheres to Wittgenstein's thesis.

Wittgenstein's thesis ignores the complementarity between a system of names and numbers and its pragmatic applications. It then rejects analytical theories in favor of the use of different senses of names in

related families of language games. The misunderstandings that arise from Wittgenstein's failure to understand the complementarity of the analytical aspects of Newton's theory and its pragmatic applications by means of initial and boundary conditions will be noted in Chapters 6 and 8.

We can now understand the error involved in the anthropic principle and also in the usual understanding of the collapse of the wave function. It is tautologically correct that the phenomenal world we know could not exist in the absence of observers somewhat like us. Thus, a substantially different phenomenal world may exist for beings radically different from us. And these worlds need not contradict each other.

The physical potentialities that make both sets of phenomenal worlds possible do not require observers, although knowledge of them does. For instance, knowledge of the existence of planets requires some type of observer. The statement that planets existed before observers existed is an empirical truth in a meaningful sense. However, the ways in which planets are characterized, or even if they can be perceived by other types of transceivers, may vary with transceivers (that is, observers).

Some of the experimental results with photons occur regardless of the width of separation between the slits in the experimental apparatus. Other results with polarization of photons in paired experiments have led to suggestions that one photon in a pair 'knows' what has happened to its paired photon and responds accordingly regardless of the distance between them. This has led to a hypothesis of communication faster than light, although it more strongly calls into question space-time phenomena at the photonic level as they are integrated into the local space-time of human observers. Still other hypotheses have been offered for these phenomena.

Our theories are analogies that are sometimes applied outside of their range of application. The slit experiments were designed to investigate whether photons are waves or particles. In some experiments the phenomena that waves produce occur. In others the phenomena that objects produce occur. However, there are experiments in which the behaviors of photons cannot be assimilated to waves or particles. This suggests that the wave/particle *analogy* is less than satisfactory. *The belief that photons must be one or the other rests upon an implicit belief in an identity between concepts and referents*. This type of analysis suggests that the space-time matrix involved in quantum physics and the matrix relevant to events involving entropy differ in meaning. Most quantum events are time reversible. But it does not follow that time has the same meaning for these events that it has for macro-physical events, particularly those involving entropy.

Particles are considered to be identical by contemporary physical theory if they are of the same type. Thus, reversibility means only that the sign of direction is opposite. Thus, if particles could observe, reversal in time would no more entail a disorientation than would our changing directions from left to right. If, however, we ever experienced an experiment in which the first phase of –t (reversed time) occurred prior to the last phase in phenomenal time, I suggest that we would become disoriented.

Numerous examples have been designed by philosophers of science to show the improbability of time reversal at the macro-physical level. Consider a glass that shatters. The shattering can follow more than one pattern. Yet, whatever pattern occurs in a particular case, the general form of that pattern will appear at worst to be not improbable. However, if one reverses events so that the glass is recomposed, this will seem to be so improbable as to be impossible.

However, there is an even stronger argument against time reversibility at the macrolevel. If time reversed itself in a meaningful sense, we would grow younger. We would have to be born again. Thus if our mother were dead and cremated, she would have to be resurrected from the elements of which she had been composed.

Furthermore, our sentences and words would be uttered in reverse and we would become unconscious in the process, for consciousness entails the recursive use of meaning. Meaning would be lost in this form of reversal. Even if one wanted to argue that consciousness and meaning are epiphenomenal, this would imply a reversibility different from quantum reversibility, for the states would not be identical except for direction.

I cannot prove in a strong sense of 'prove' that consciousness in the sense of recursive inquiry and meaning are integral aspects of our human reality. But it would be a major and unjustified step, as well as an unproven one, to argue that they are not integral to knowledge of reality. It is the recursive nature of inquiry that produces knowledge of consciousness.

A computer can be programmed to mimic this, but this program is generated by a mind that is recursively aware of its consciousness as it pushes past its previous understandings. Perhaps some day a computer will achieve consciousness. I doubt that an inorganic computer can, but that may reflect my intellectual limitations.

The concept of time reversibility at the macrolevel treats time and space as independent realities rather than as modes of measuring the relations of things. If Kepler's laws cannot be derived from Newton's laws because relevant initial conditions keep changing, many of these

strange conceptions depend upon an even greater divorce between mathematical theorems and the pragmatic assessments that complement them.

If one examines how contemporary physicists measure time and space, one will note that they employ instruments that apply measures to the relations of things (complementarity) and not to time and space independently of such relationships. Let me back up a bit to make a relevant argument. Gödel's (1933) *Entscheidungsproblem* is well-known and undisputed. Gödel proved that for any mathematical system strong enough to contain some system of natural numbers and weak enough so that the rules of inference are recursive, it can be proved that there are relevant true propositions that cannot be derived from the axioms of the system.

Gödel's proof of the *Entscheidungsproblem* – and his undermining of formalism, in mathematics – is undisputed, but its common-sense implications for the layperson depend on an implicit formalist position that its analytic truth value is independent of pragmatic meaning, a position I reject (see Kaplan 1989, pp. 24–31). For instance, a formalist would argue that the contradiction to which the class of all classes paradox gives rise is a true contradiction. (I agree that the application of Bertrand Russell's axioms does produce a contradiction and suspect that it can be avoided by placing restrictions on Russell's axioms.)

However, there is a different way to analyze such propositions. In Chapter 4, I showed that when particular signs become the signed referents of themselves in the types of propositions that give rise to logical paradoxes, they are analogies by proportion – and hence metaphors – unless it could be shown independently that they are indeed identical.[2] This, however, cannot be done.

Note, with respect to Gödel's thesis, that some distinguished mathematicians have claimed that true propositions of arithmetic have been discovered that cannot be derived from the axioms and definitions of arithmetic. However, if we are dealing with pure formalism, then the axioms and definitions establish what arithmetic is, and one cannot overcome this by referring to a meaning for arithmetic outside of those axioms and definitions. Thus, on a strictly formalist account, if Gödel's proof is correct, it is incorrect; but, if it is incorrect, it is correct. Even a proof of incompleteness, thus, would be insufficient to determine that a true mathematical proposition is a truth of arithmetic unless the axioms and definitions represent a concept (arithmetic) not entirely embodied in them. Thus, there would be an incompleteness not merely in the axiomatic structure of arithmetic but in its representation in formal signs.

If the thesis of incompleteness in this extended form is true of a system as precise or logically complete as mathematics – and it seems to be – it is true of physical systems as well. Note, however, that I have not proved this; I have merely provided a strong reason to believe that it is true. I call this assessment a fit between the realm of knowledge and a particular assertion within it. Assessment of the validity of logics or physical theories always involves ideographic elements. Logicians moved beyond Aristotelian logic because they knew that the heads of horses were the heads of animals and that this cannot be proved by Aristotelian logic. Experimental results support the conclusion that space is non-Euclidean. The experimental matrices within which theories are judged are not themselves included in the theories, and even the concepts employed within theories depend for their support upon world views that cannot be encompassed within any single perspective.

The assertion that meaning is not epiphenomenal *fits* the realm of knowledge. It accords with our understanding of our behavior. Our knowledge of evolution suggests that self-consciousness, which treats phenomenal knowledge recursively, that is, as consisting of objects, is an element of fitness. The acceptance of scientific theories and not merely of the definitions or categorizations of such things as apples and horses and minds depends upon fit with the *surround* of knowledge, for there virtually always is evidence going against a theory and an interpretation, that is, a naming, of data.

Roger Penrose, in his brilliant *The Emperor's New Mind*, speculates that there is a Platonic world of numbers to which minds have direct access (Penrose 1989). Although I cannot prove this to be false, it does not fit the realm of knowledge as I understand it. In the first place, if that is how mathematical discoveries are made, then only a relatively small number of people have possessed such access. If the world of numbers existed in this sense, I think the number of minds with access to it would be far larger.

Moreover, calculus was invented independently in the sixteenth century by Newton and Leibniz. There were brilliant mathematicians in earlier centuries who did not have a clue as to its possibility. It seems likely that the invention of calculus was related to the empirical aspects of physics, for the invention occurred more than once when it was sought as an answer to problems.

The mind is an evolutionary product. Furthermore, we know that it develops pathways after birth through its experiences with the world and that this is essential to various types of intelligence. We also know that the preconscious has an extraordinary capacity to come up with solutions to problems, even problems that are not mathematical.

Perhaps, as John von Neumann speculated, the preconscious mind uses a language different from that of the conscious mind. Or perhaps, it is the home of complex 'fitting operations'. We know that children can recognize individuals in ways that we were not able to program computers to do until very recently. Is it not likely that the preconscious mind can recognize a fit between a solution and a problem? Once that fit is recognized by the preconscious mind, perhaps the puzzle unfolds to the conscious mind as if present all at once.

In at least some cases, true conclusions are apparent to mathematicians but not the intermediate steps. Howard Raiffa gave me a manuscript copy of *Games and Decisions* – the book he did with Duncan Luce – in 1956 (Luce and Raiffa 1957). He asked me to see if I could find any holes in the arguments that they could correct before publication. Even with my vanishingly small ability in mathematics, I found more than a dozen errors in derivations but no problems in the authors' positions.

How could they be so right and at the same time so wrong in many of their examples? There is no such thing as a demonstration except to a mind that is 'tuned' to perceive it. Some minds are not 'tuned' to perceive that 2 + 2 = 4. Because I 'know' that two plus two equals four, I do not have to count the units. I immediately 'see' the solution. Other minds, such as that of Professor Penrose, can perceive solutions with respect to enormously complicated problems that others like myself cannot.

How can such insights occur? One possibility is that some minds can detect patterns and apply them preconsciously to relevant problems. Because these are analogies and not proofs, they may be applied mistakenly.

We misperceive at least part of this problem because most people are aware that they cannot understand complex mathematical demonstrations but unaware that they cannot understand assessments of complicated situations when these use words in sentences that they believe they can understand. Many students of international relations theory insist they know what I mean by systems theory even though I know that they do not know.

Operational preconscious knowledge of patterns immediately presents solutions when our minds automatically apply them. When Howard Raiffa presented a formal proof, his assurance sometimes led to carelessness in presentation. Thus, I occasionally was able to find errors in his presentations but not in the results.

When Raiffa presented his alternative to the Nash solution for asymmetric bargaining games, I immediately presented examples that showed that whether his criterion or that of Nash applies depends on attitude

toward risk. He immediately conceded the point and stated that I had in effect reinvented Savage's minimax regret principle, which Savage applied in zero-sum games as an alternative to minimax.

Both the Nash solution and Raiffa's alternative produced *unique, but different*, solutions to asymmetric bargaining games. Martin Shubik had a wry expression on his face that showed that he did not like the agreement to which Howard and I had come. He likely preferred a world in which fairness would have a unique solution. But he did not, and I think could not, offer a rebuttal to our analysis. *The world cannot be reduced to logic, a conclusion I reached in the first chapter of this book with respect to qualitative concepts and have supported from different perspectives at different stages of the argument.*

Addendum

I should now like to show how the position embodied in this chapter can be applied to a recent problem. Tests of Bell's theorem are normally interpreted to show that the polarizations of entangled photons are coordinated simultaneously at up to infinite distances. This interpretation seems implausible to most physicists because they miss what frame of reference, or of transactional use, reveals. That is why so much effort is spent on string theories that in the present state of knowledge have no density of connections with the vast realm of knowledge in physics. The acts of releasing and of polarizing entangled photons are separated in time and space because they are measured relative to the experimenter's inertial system. These measures may be made at up to an infinite distance. On the other hand, the entangled photons have a *constant* relationship to the inertial system from which they are released. Thus, the concepts of 'simultaneous' and 'up to an infinite distance' are not relevant to an analysis that has the entangled photons as a *frame of reference*.

Consider the Michelson–Morley experiment in which signals sent in the direction of the inertial system's movement return at the same time as those sent on an opposite path that is longer from the framework of reference of the inertial system. The theory of relativity predicts that the photons return at the same time in the Michelson–Morley experiment and that the polarizations of the entangled photons occur simultaneously from the framework of the experimenter's inertial system in the tests of Bell's theorem. That is why time lengths are longer on each of independent inertial systems, implausible as this seems from the standpoint of ordinary language. String theories would be required only if

theories were identical with the world rather than being analogs that enable us to deal more or less adequately with the world. Whether string theories ever will be relevant to problems of physics is not an issue I am competent to address. I do think some of the experiments in remote viewing that I have seen were suggestive but not convincing.

A recent obituary of one of the authors of the Big Bang hypothesis reminded me of the tendency of some physicists to hypostasize their analog theories. He started his calculations from a small fraction of a trillionth of a second into the time line of the early universe. There is a reason for not starting from the presumed origin. If the Big Bang really were the beginning of the world, rather than merely the beginning of our extended universe, it would originate from a true point, that is, a point in which the concept and the referent are identical. If there were a true point, there would be no motion because the point would have neither divisible length nor breadth. If there were no motion, there would be no explosion (or implosion if our universe is an episode in a cycle of an alternately expanding and contracting universe).

I do not regard the big burst as the beginning of the world, although it may be the origin of our particular world. I do not regard the big burst as arising from nothing, for a 'nothing' is not an object of experience. And if I believed, as some physicists seem to believe, that billions of stars emerged from nothing, I might be inclined to believe in miracles. Instead, I believe I have reached the current limits of my understanding.

Part III
Systems

6
Theories, General Theories, Systems Theories, and Language Games

Theories, unlike propositions, advance the state of knowledge. Syllogisms in which minor premises are employed in deductions from major premises were included in Aristotle's arsenal of science. Galileo used instruments that measured the movements of physical objects to produce theorems that could be applied to moving objects. Newton showed how theorems could be formulated to produce a general deductive theory that applies to the qualities of all physical objects except particles. However, its use is dependent on two requirements: common measures for the qualities of physical objects and common designations for the qualities.

Systems theories center on an equilibrium among the essential rules of a system. These rules specify *regularities* of behavior. Systems theories are neither general nor deductive. I will show in this chapter how and why systems theories, unlike the maxims of ordinary language philosophers, add to the state of scientific knowledge.

General theories

The great advances of science in the modern period centered on Newton's theory of physics. Newton's theory is a general theory that includes a set of theorems based on concepts related to the qualities of physical objects. These theorems apply *generally* to all experiments that involve the *qualities* of physical bodies such as bullets, humans and planets. *They do not apply to particles*. Theories of particle physics have a different format that employs the so-called wave equations that are briefly discussed in Chapter 5. Thus, even in physics not all theories have the same form.

Newton's theorems consist of names, of numbers, and of their relationships. Newton's theory, thus, was stated in an analytical form. The meanings of the names of the qualities in his theorems are commonly understood in terms of a world view. 'Mass' and 'energy', for instance, stand for concepts that can be understood within a world view that refines their extra-analytical meanings and that relates these meanings to instruments that provide common measurements that are virtually independent of the types of physical objects to which they are applied.

Newton's theory *cannot be used deductively* until it is applied to something in the *world of experience*. Newton stressed that application of his theorems rests on the use of the relevant 'initial conditions'. In its simplest applications Newton's theory can be used deductively to investigate how a specific initial condition will affect a physical state of affairs. Its deductive application produces results that have specific senses for agents. However, these senses *cannot be deduced* from Newton's theorems, which do not mention them. And they will differ with the placements and characters of agents.

Newton also made reference to boundary conditions, for instance, a body in motion. Experimental physicists are very careful to take note of the boundary conditions that are relevant to their experiments.

Philosophers of ordinary language such as Scriven, as I will show in Chapter 8, underestimate the power of general theories to produce new knowledge because they do not understand what it means to assert that they are deductive. For instance, one can use Newton's theorems to predict how much farther a bullet will travel if more powder is added. But one cannot directly predict the full path of a planet from its initial conditions because its flight path will continue to change as it continues to interact with other objects during its flight path. That is why Newton specifies boundary conditions such as 'a body in motion'. The philosophers of ordinary language do not make this distinction and, hence, believe that general theories cannot be used to account for the complexity of the world. They do not pay sufficient attention to how experimental physicists carefully construct experiments to eliminate the effects of boundary conditions and to limit their conclusions to the initial conditions of the experiments.

In one of our enlightening discussions in his home in Princeton, Eugene Wigner emphasized that he had received the Nobel prize for reasoning as an engineer does, not for constructing a theory or for making a direct deduction from a theory. His engineering solution would not have worked had there not been a set of theorems, for only a set of theorems can establish an equality that permits a deduction. And

only the invention of an experimental situation can enable an experimental physicist to apply one or more of the theorems of a theory to the invented experimental situation.

I was fortunate that I was able to participate from 1956 to 1961 in a Saturday roundtable that included Leo Szilard, Harold Urey, Nandor Balazs, and occasional others. Membership required an ability to survive frequent harsh intellectual assaults. The ways in which theories are related to experimental designs was understood by all. At one session Leo Szilard mentioned that he had invented a number of experimental situations that he asked experimental physicists to investigate in order to open up a new area of research in physics, biophysics. The conclusions that would be reached in such experiments would apply within the *boundary* conditions of the experiments.

It was obvious to distinguished physicists such as Szilard, Wigner, and Urey that their designs of experiments were not derived from Newton's theorems. The design of experiments is the intermediate step in the application of Newton's general deductive theory that Wittgenstein and the philosophers of ordinary language did not understand. This intermediate step does not produce a simple progression of predictions or descriptions because the experimental designs are usually purposefully constructed in response to perceived problems.

I do not know enough about quantum computing to speculate about how it will affect the previous discussion. Will it cast doubt on the concept of analytics? Or will it constitute a method for working out non-linear progressions? If the latter, it may become a substitute for some types of experiments. In that case, it would not change the complementarity of analytics and pragmatics, although it might present a new method for the designs of experiments.

Language games

Language games consist of propositions. When the physical objects that are referents of designations in propositions are successively modified by small changes, each new referent stands on its own. As I noted in Chapter 4, Leonard Linsky, who taught students about Wittgenstein for decades, wrote, although without conviction, that perhaps exhausting the universe of possibilities would provide knowledge of which concepts rigidly designate which referents. However, Wittgenstein's distinction between a physical object and a context, on which Linsky's conjecture rested, fails because there is no external order that governs the choice of physical objects or the addition of contexts. Designations of physical

objects are subject to dialectical transformation as boundary conditions change. This is why Quine's critique of Carnap works and why no similar critique of a general theory, which rests on common qualities of physical objects rather than on the objects themselves, is relevant. The common qualities of Newtonian and Einsteinian theory do not vary with individual boundary conditions; they apply generally.

There is no linear process of evolution of physical objects such as fathers or roses which permit their designations to remain common throughout evolution. An enormous mass of biological evidence supports this conclusion. On the other hand, a transition from Newton's theory to Einstein's invokes a new set of common designations of the relevant qualities of objects, but not a set of additive contexts. Such transitions do not produce continually diverging pathways or dialectically changing designations as is the case in non-linear cultural and biological evolution.

In the late nineteenth century important cultural anthropologists subscribed to the thesis that cultural evolution is linear. Careful investigations eventually showed that this was no more true in anthropology than it was in biology. Studies of biological evolution had shown that new elements in an evolutionary chain incorporated a new homeostatic equilibrium that served dialectically as a new base for applications and designations. There is no linear progression. Instead, there are continually diverging pathways. *These are among the considerations that led biologists to systems theory and away from general theories*.

Why wittgenstein's objection to theory is invalid

Advocates of language games reject theory on the basis of Wittgenstein's thesis, shared with Frege, that an object may have more than one sense. If the same object has more than one sense, then, Wittgenstein concluded, the deductive process that characterizes theory is flawed.

The enormous success of Newton's general and deductive theory might have suggested that something was wrong with Wittgenstein's position. Wittgenstein had failed to perceive that senses and physical objects do not appear in the analytics of Newton's theory even though they may be relevant to its interpretation within a world view. Newton's theory consists of the names of qualities and of their relationships. The names, and the concepts that apply to them, for instance, 'm' or mass, do not change with different applications of a particular theory. Although the relationships of the names of the qualities may change from theory to theory, they do not change with the addition of contexts.

For instance, mass does not mean the same thing in Newtonian and in relativity theory because its relationship to energy is different in each. But the meaning of a concept within a theory, for instance, mass, does not change with changes in the measures of qualities.

When an *initial condition*, for instance, the measure of mass with respect to a particular object, is changed from its previous state in an experiment, the experimenter's sense of the quality (of mass) will not change even though the sense of the referent for an agent may change. Suppose two agents placed on different locations on the earth each use Newton's theory to deduce the time of appearance of Venus based on their respective initial conditions, and then use this time of appearance to designate it as the evening star and morning star respectively. The different senses of the referent belong to different agents *of the same type* in different places. But the terms of the deductions are common for the different agents who, thus, can determine *in common* which of them will see Venus as an evening star or which will see it as a morning star.

The language games thesis which Wittgenstein substituted for theory rests on a failure to distinguish between complementary aspects of knowledge. An analysis related to Frege's specific example in which Venus is both the morning and the evening star will show what the mistake is. If, for instance, a physicist applies Newton's theory to the solar system in which Venus is the second planet, he can determine – *although not directly* because the initial conditions will keep changing – when he will see Venus in the evening sky and when he will see it in the morning sky. These senses will be different for observers who are placed differently. But the calculations that produce these differences in relative positions are common for agents of the same type.

Senses are not included in Newton's theory although differences in senses may be produced by differences in initial conditions when a theory is applied by an agent. Use of a theory of the solar system shows that each sense is produced *for an observer like us* in a particular place by the positions of the planets of the solar system. The equalities of Newton's theorems are consistent with their deductive applications in different conditions, and the senses do not contribute to *or result from* the mapping operations of the theory.

Charles Taylor's (1985) thesis, which responds to the Wittgenstein/Frege thesis that an object may have more than one sense, assumes that equality will often be lacking. It can be restored, he says, by taking background conditions into account. This assumes that the equalities expressed in Newton's theorems are violated when the theory is applied. I have shown above that applications of Newton's general theory do not

violate the equalities of Newton's theorems. If the deduction is not validated by experience, either the theorem is incorrect or some boundary condition is contaminating the result, for instance, an external factor that is interfering with the motion of a body.

Theorems are used to generate results, which are then evaluated pragmatically within the framework of a world view. Differences in the senses of different applications are not violations of the theorems because senses are not included in the theorems. Senses are invoked when theorems are applied. Agents of the same type in different places in principle will agree on which of them will see Venus as a morning star and which will see Venus as an evening star because each will invoke the *same theorems*.

Wittgenstein's error lay in his failure to distinguish between agents and agency. Agency is external to theory while knowledge of the relationships between the locations of agents and the positions of Venus are recursive products of the applications of theory within the framework of a world view. Thus, the language games thesis rests on a philosophical error, an error that re-emerges in Wittgenstein's discussions of other topics some of which I touched on in Chapter 2.

If there is a discrepancy between the applications of Newton's theory and the pragmatics of the external world, a scientist may look for boundary anomalies. For instance, there may be a hidden planet that is affecting behavior. Some astronomical discoveries have been made on this basis. Analogically this would be a case of applying a better map, not a case of moving from a non-equality to an equality.

On the other hand, every homeostatic process produces an equilibrium only under some boundary conditions. For instance, biological life as we know it could not exist in the absence of water. And various types of life were eliminated when the boundary conditions consistent with their survival were no longer present. That is why the equilibriums of each set of essential rules of the six theories of Chapter 2 in *System and Process* (Kaplan 1957) are such only within their own (individual) sets of boundary conditions. And that is why Waltz's proposal for a systems theory, which ignored boundary conditions, violated a *fundamental requirement* not only for a systems theory but for any type of theory.

On the other hand, the judgment in a pragmatic sense of the truth or the falsity of a theory cannot be settled definitively by protocols of confirmation or falsification. As I argued in *Science, Language,* there is no canonical test that can prove or falsify a theory although some may seem close to doing so within the framework of a world view. Acceptance of a theory is related to one's world view. It represents a judgment that

a theory fits the contemporary body of evidence better than alternative theories. In some cases they do this with seeming, but not actual, certainty.

Because systems theories do not rest on common measures and common designations, they can be used only inferentially and not deductively. In any event, the essential rules of systems theories are in a state of homeostatic equilibrium, not in a state of equality. A disruption of a desired equilibrium by a deviation from the essential rules of the system in principle can be negated by countervailing activities. If this is what Taylor means by background conditions, then this is no more than an application of standard scientific method. Scientists exclude such results by carefully controlling experimental conditions. And they expand applications of theory by carefully expanding initial conditions.

Systems theories and designations

General theories and systems theories are similar in some ways and significantly different in other ways. The analytic elements of a general theory are individually composed of the relations of the qualities of objects. The elements of the theorems of a general theory are in a state of equality. Their measures are produced by various instruments.

In systems theories the analytic elements consist of the *names* and *relations* of behavioral elements, that is, of the behaviors of physical objects, rather than of the qualities of physical objects. The complex of essential rules is in a state of equilibrium, as are the relations between the rules and the other elements of the theory. They are not in a state of equality. The concepts invoked by names will differ with the system to which they are applied. For instance, the meanings of 'alliance partner' and 'bloc member' differ because they apply to different types of systems. Thus, a reference to France as a participant in international affairs will be misleading unless the correct designation is understood in applications.

I was familiar with such distinctions because I had read with care Lewis Morgan's *Systems of Consanguinity* (1997[1871]) even before I read Ashby (1954). In one Indian tribe, for instance, a mother was a female in a given age cohort who was responsible for various aspects of nurturing behavior with respect to children in a corresponding age cohort without respect to direct biological descent.

Morgan wrote in the late nineteenth century, a period in which the Hegelian influence on cultural anthropology was strong. He believed

the evolution of social systems was linear. Careful subsequent research established that this thesis was incorrect. Succeeding cultural anthropologists were able to show that intervening events affected the evolution of social systems in a fashion that leads to branching.

If one wants to explore evolutionary processes in biological systems, the biological systems that exist prior to and subsequent to branching need to be distinguished from each other when the effects of disturbances are taken into account. The durability of the interrelationships of the elements of a system, that is, the persistence of a realworld system, attests to the centrality of these relationships in investigating the effects of disturbances. Wittgenstein's language games thesis rests on the use of contexts that are applied in a linear fashion to an object. Systems theory, in accordance with the understanding of biological evolution, applies so-called contexts to different evolutionary chains and products.

The similarities and differences in the essential rules of similar types of systems, for instance, patriarchal and matriarchal families, provide a basis for making different inferences about the effects of similar disturbances. Systems theories except in special cases, when applied to the world, give rise not to deductions as do general theories but to inferences, that is, first approximations that are related to differences in their complexes of essential rules.

Essential rules specify regularities of behavior with respect to systems that have achieved a sustainable equilibrium. This position was clearly expressed early in the first chapter of *System and Process,* 'On Systems of Action': 'A system of action is one in which *describable regularities*, that is, behaviors, characterize the internal relationships' of its elements under *equilibrium* conditions (Kaplan 1957, p. 4; emphasis added). This immediately tells a reader that the design of physical objects including agents – or alternatively of policies – and not the relations of the qualities of objects as in Newton's theory, is central to systems theory. That is why 'design' is in the title of Ashby's (1954) book. As I will point out in subsequent chapters, the *designs* of mechanical objects or of foreign policies are not deduced from theories although a theorem or rule may be relevant to the evaluation or specification of a design.

The essential rules of a multistable system are in a state of equilibrium and the set of rules is in equilibrium with the elements and boundary conditions of the system. The elements of multistable systems self-adjust as external factors affect them. Ilya Prigogene received a Nobel award for demonstrating that this is the case in thermal kinetic systems. Thus, multistable systems are in process until a new set of equilibriums is established.

That is why 'process' is in the title of *System and Process*. And that is why I wrote in the preface of *System and Process* that the form of general theory, which was dominant in the 1950s, did not apply to any of the six theories of Chapter 2 of that book. The essential rules of systems theories are central to understanding why the impact of an identical initial condition may produce radically different results in seemingly similar but different types of systems.

The essential rules of systems theories are not in a state of equality either internally or in relation to other elements of the system. They are an aspect of a system that is in a homeostatic self-adjusting equilibrium. Homeostatic equilibriums are not exact but function within a range that depends on variations in initial and boundary conditions. Thus, when an expectation to which the theory gives rise does not occur, the investigator searches for the initial or boundary conditions that produce it *in this type of system in these boundary conditions*. This is a judgment, not a proof. It does not establish an equality but it does account for a specific type of equilibrium.

When an input to a system modifies its regular behaviors the transition is dialectical rather than additive, as in Wittgenstein's position, because the *close linkage* between the projected result and the homeostatic equilibrium of the essential rules of a system produce differences in the meanings of designations. Thus, for instance, the meanings of 'father' in a modern American system and 'father' in a classical Near Eastern system are different in significant ways. This in effect is what Quine brilliantly demonstrated in his critique of Carnap in his 'Two Dogmas'.

Main concepts of systems theory

Hippocrates believed that the human body has a capacity to heal itself. The concept of a homeostatic equilibrium was implicit in Hippocrates' science. Yet, until the twentieth century systems theory had not become part of the arsenal of science.

In their development of systems theory Ashby and his colleagues used and also developed a number of concepts that are useful in the analysis of biological systems. In addition to their biological relevance, these concepts also are applicable to social systems and even to robots. Consider homeostasis. A homeostatic system is one that adjusts its internal workings while maintaining its equilibrium in a changing world. Next consider ultrastability. It is possible to build an automatic pilot that keeps a plane on level flight even during disturbances which

tend to move it from level flight. If, for instance, its connections are reversed thereby increasing rather than overcoming the deviations from level flight, the automatic pilot will sense the deviation and correct the destabilizing process by changing the circuitry of the system. This process has an analog in brain systems.

Complex systems are not only homeostatic and ultrastable. They also can be multistable. That is, as a variety of inputs produce perturbations in a complex system, the parts *mutually* continue to adjust while maintaining the stability of the entire system. In some cases, these mutual adjustments lead to the emergence of new systems. This is the *process* that Ilya Prigogene referred to as 'self-organizing'. It has obvious relevance to evolution.

In other cases, a destabilizing process may be set off that cannot be stabilized without external intervention. If Waltz had understood systems theory, and if he had understood correlatives, he would not have made the mistake of believing that subsystem dominance was contradictory to the notion of a system.

A subsystem dominant system is one in which its equilibrium depends upon the mutual adjustments of the actors as in, for instance, an oligopoly. A system dominant system such as a perfect market is a system with a very large number of actors in which the choices of individual actors have a negligible impact on equilibrium. This multistable process, when successful, results in a system in which the elements of the system respond to a set of stable relationships that can be expressed in a complex of lawlike statements. These are what I call the essential rules of the system. It is this complex of essential rules that provides for the first approximations that are inferred when the equilibrium of a system is disturbed by inputs to the system. And these first approximations provide an orderly focus for the anticipation of responses that can modify, or even defeat, these first approximations.

In the third chapter of this book, I showed the relevance of multistability to conceptions of justice. The concepts discussed above involve processes for which there are no common measures. Thus, they do not permit general theories that can employ formal deductions in applying them.

Because the initial conditions of different types of systems are different, they will vary within types, for instance, parliamentary and presidential democracies. Different initial conditions produce differences in types of systems, for instance, democracies and dictatorships. Thus, systems theory tends to lead to comparative and not to general theories. The failure to take this sufficiently into account accounts for weaknesses in the otherwise impressive theories of Talcott Parsons and David Easton,

which attempt generalizations unrelated to the multistable processes that produce different systems of a roughly similar type. They neglect the ways in which theorems are employed differentially in engineering analyses of processes in the world.

My investigations of the concepts relevant to systems theory led me to an analysis of how we maintain a sense of self as we undergo change. I explored that topic in *Alienation and Identification* (Kaplan 1976b). I coined the term 'transfinite stability' to account for this process. It is even more relevant to justice than is multistability. The term 'transfinite stability', or 'transtability' for short, is not fully adequate, but it at least identifies a crucial process. The transfinitely stable system is one with a complex system of purposes. These purposes are not necessarily fully consistent under all environmental circumstances and they give rise to conflict under many environmental circumstances.

Transtability permits the evolution of values over time and the building of character. For humanity, it implies a process in history in which learning about human potential takes place. Although every manifestation of this process is finite, no manifestation ends the process any more than a last term exists for an infinite set. For every satisfactory state of the world, there is always, if only in principle, some potentially superior state. It is in this sense that the process is transfinite.

Form of theory and type of philosophy

There is no direct link between the form of a theory and pragmatism or logical positivism. It is possible to produce a successful general theory without relating it to logical positivism. Rudolf Carnap was the brilliant proponent of logical positivism. Morris Cohen, on whom I wrote my dissertation, was a vigorous proponent of pragmatism who engaged in stormy debates with Carnap. Yet Cohen agreed with the use of general theories in physics because they produce highly accurate predictions up to a remote limit. What Cohen denied was that there is an identity, that is, an invariant relationship, between Newton's axioms and the structure of the world.

From the standpoint of the thesis of this book, both Carnap and Wittgenstein, although taking opposed positions, failed to take into account what Quine called the dogmas of empiricism. The meanings of the designations (names) of objects, as I tried to show in Chapter 1, evolve dialectically as do world views.

The form of theory, therefore, does not depend upon whether one starts from a positivistic or a pragmatic philosophy. Use of the form

of Newton's theory, for instance, depends on whether the elements of the theory can be measured by instruments that pragmatically produce common measures that can be applied to commonly designated elements of theorems.

Thus, a decision to accept or to reject the Newtonian form of theory for social systems is not related to whether one starts with a positivistic or a pragmatic philosophy but on pragmatics, that is, on whether the subject matter is susceptible to common measurements and common designations. One problem with general theories of sociology is that they lack a mapping capability that takes differences in designations into appropriate account. The maxims of the philosophers of common language suffer from an even greater defect, as I will show in Chapter 8. Systems theories minimize these defects.

7
Misinterpretations of International Systems Theory

When I wrote *System and Process* the Newtonian general deductive model of theory was regarded as a *universally* applicable form of scientific theory by most political scientists. Writers such as Morgenthau viewed the concept of a balance of power as the equivalent of Newton's theorems. I was an advocate of science but I also was versed in cultural anthropology where it was well known that theories based on common designations and common measures did not work.

Systems theory was developed by biologists who worked in areas in which systems evolve during a multi-stable process. Hence, analysts who understand what systems theory is do not pursue general deductive theories for social systems. Systems theory was a radically different type of theory and I attributed my use of it to my reading of Ross Ashby's (1954) *Design for a Brain*.

I thought that I would not be able to influence my readers unless I showed them that I understood the then generally accepted model of a scientific theory before I presented an alternative that applied to a different type of subject matter. To show that I understood how the generally accepted scientific model of theory was constituted, I described it in a paragraph in the preface of *System and Process*. In the last sentence of that paragraph I wrote '*if* theory is interpreted in this strict sense, this book does not contain a theory' (Kaplan 1957, P. xii; emphasis added).

I was telling readers that they should not expect the theories in my book to be general deductive theories. Stanley Hoffmann quoted that entire paragraph *except for the last sentence*. Hoffmann (1959, p. 357) then immediately wrote that I was trying to achieve 'as soon as possible the ideal of a deductive science'. Because it was generally believed in political science that Newton's theory was the model for a scientific theory, no one noticed that Hoffmann provided no evidence for this claim.

Although there had been several careful reviews of *System and Process,* this ended with the Olympic self-assurance of Stanley Hoffmann's brilliant but superficial performance in 'The Long Road to Theory' (Hoffmann 1959). For more than a generation the succeeding literature was based on a consensual belief that I was an advocate of general, deductive theory of international relations. It also was commonly believed that general theories were inherently positivistic. A careful reading of the recursive reasoning in Carnap's (1967[1928]) *The Logical Structure of the World* would have undermined this latter thesis. Yet these twin misinterpretations fueled an entire generation of arguments in the literature on international relations theory.

Hoffmann, who apparently believed that if/then propositions do not apply to deductive theories, next lectured me on the importance of if/then propositions. He dropped a footnote to a senior political scientist at Harvard, Carl Friedrich, to reinforce his position in case I wanted to dispute it.

However, if/then propositions are intrinsic to the use of deductive theories. Think of an effort to increase the range of a projectile. The increase in the amount or the strength of the powder (initial condition) would be part of an if-clause, and its deductive use with respect to a theorem would produce the then-clause. The then-clause would state the new distance the projectile would travel. This is an elementary example of how a theory, *unlike a proposition*, is used to produce new knowledge.

The philosophers of ordinary language understand that if/then examples are compatible with a general deductive theory. Where they go wrong – and Hoffmann later made a parallel mistake – is in thinking that the applications of general theories are restricted to what can be *directly* derived from their theorems.

If these philosophers had paid attention to how physicists, following Newton's prescriptions, *design* experiments for complex problems, they would have had a better understanding of the relationships between a set of theorems, or a set of essential rules, and their uses in a variety of circumstances. I will say more about this issue below and will elaborate on it in Chapter 8 when I deal with the errors of philosophers of ordinary language such as Scriven.

Waltz, who did believe that a general deductive form of theory was the only correct form for theories, asserted that my theories were not systems theories because they did not conform to the general theory format. That conclusion would have astounded Ross Ashby, my colleague at the Center for Advanced Study in the Behavioral Sciences, who was reading my chapters on systems theory as I wrote them.

Hoffmann did not do any better. If Hoffmann had actually read the first two chapters of *System and Process,* he would have seen that rather than moving toward a general theory 'as fast as [I could]', I was in effect moving away from a general theory as fast as I could. In the very first chapter, which has the informative title 'The Analysis of Systems of Action', I stated that 'regularities of behavior' (not the relationships of the qualities of objects) constitute the core of systems theories. Newton's theory is not 'a system of action' or a system in the indicated sense.

In the second chapter I hypothesized six different types of international systems. Each theory had its own set of essential rules that related to each other the types of actors relevant to that system under a set of boundary conditions. The essential rules of the individual systems constituted the *behavioral regularities* that were in a state of homeostatic equilibrium. That is why I did not use the concept of equality, which is central to Newton's theorems, but instead *consistently* used the concept of equilibrium, which applies to homeostatic systems.

Systems theories present a paradigm different in critical ways from that of general theories. The central aspect of systems theories, regularities of behavior – *unlike the qualities of physical objects such as energy*, which are central to general theories of physics – can be described but not commonly measured. The six preliminary theories of my second chapter took this into account.

I used the pragmatic concept of capabilities, rather than the concept of power, even in the essential rules of my 'balance of power' theory, although power was the term then universally used by international relations theorists. Power, unlike energy, as I knew, is not a quality of objects that is subject to common measures. This was emphasized by my uniform placing of quotation marks around the concept of 'balance of power', a concept that I regarded as tautologous. I did not put quotation marks around bipolar, although it was central to two of my theories, because it is not tautologous.

Morgenthau, who thought that a general theory based on a concept of power would be the equivalent of Newton's theory, explicitly stated that bipolarity was a variant form of a universal balance of power. Thus, his suggested theory – in actuality a proposition that had no relationship to the form of a general theory – had no design and it was unrelated to any process. Because I was hypothesizing systems theories, which are based not on equalities of qualities but on equilibriums of regular behaviors, I placed the centers of my hypothesized six theories on the equilibriums of their individual sets of essential rules. The sets of essential rules expressed the different regularities of behavior of the six systems (theories) of Chapter 2 of *System and Process*. Thus, I presented six different

designs for theories of systems of international relations. Each system would be in *process* as events affected it.

If Hoffmann had read, and understood, Quine's 'The Two Dogmas of Empiricism', he would have known that my use of boundary conditions for theories put systems theory within the orbit of pragmatism because the meanings of designations are not constant across boundary variations. He then would have understood why such designations as France, the United States, or even 'state actor' did not appear in my hypothesized theories.

Consistently with the standard format of systems theory, the six theories of Chapter 2 used designations such as 'essential actor' or 'leading bloc actor' that apply to particular *types* of international *systems* with their own sets of rules that are in a state of homeostatic equilibrium within the framework of their respective requisite boundary conditions.

There was another reason many professionals liked the (mis)interpretations of my position by Hoffmann and Waltz. This enabled them to avoid discussion of difficult issues of philosophy that would have been invoked by recognition of the differences between general and systems theories, for example, equalities vs. homeostatic equilibriums, analytics vs. pragmatics, issues of designation, and so on. This diverted attention from an approach to theory that would have clarified problems of research. My students were engaged in a decades-long process of exploring thousands of years of history in an effort to discover the boundary conditions that were consistent with the stability or instability of different types of international systems that evolved in various geographic areas during various periods of history (see Hsi-Sheng Chi (1968) and Winfried Franke (1968) in Kaplan (1968b)).

The supposed demolition of a general theory approach by Hoffmann paved the way for acceptance of Waltz's misuse of economic theory. When Waltz argued that my theories were not systems theories, it was believed by many that resort to economic theory might provide a different model for a general theory that, unlike systems theory, would work.

There were many fundamental mistakes in Waltz's approach to theory. I will mention here only Waltz's avoidance of the distinction between perfect and imperfect markets, which had been central to discussions of economic theory since the 1930s, his use of a perfect market analogy which was irrelevant to any known international political system, and his failure to understand the relevance of boundary conditions.

Stephen Walt's (1987) study did not falsify Waltz's theory because Walt did not specify the boundary conditions under which Waltz's

theory could be expected to hold. One might as well claim that the death of a person after the ingestion of poison disproves a theory of how a biological system sustains life. Yet, anyone who claimed to have studied economics for years, as Waltz claimed to have done, should have known that imperfect markets are stable only under limited boundary conditions.

The belief that Walt's study disproved a general theory approach led to the next major mistake in the discipline. By the time students of international theory had discovered the maxims of the philosophers of ordinary language, I had already shown the defects of their thesis in *On Historical and Political Knowing* (Kaplan 1971). These philosophers sought a relationship to history. However, as I will show in the next chapter, in addition to finding the wrong relationship to history, realists failed to learn why the use of maxims including the maxim of 'balance', *added nothing* to a pragmatic assessment of a state of affairs. Systems theory by contrast adds to pragmatic knowledge.

The pragmatic relevance of systems theory is easy to show. If one wants to understand major differences in the foreign policy behaviors of France between the mid-twentieth and the nineteenth centuries, one needs to know that France in the nineteenth century was an essential actor in alliances in a 'balance of power' system and that in the mid-twentieth century it was a non-leading actor in a bloc in a loose bipolar system. One will then understand that Metternich's thesis of realism applied primarily to the system in which he participated but not to the fundamentally altered system of the mid-twentieth century.

While I was writing the first draft of *United States Foreign Policy: 1945–1955* (Reitzel et al. 1956) for the Brookings Institution, I was puzzled by the differences in foreign policy patterns of that period from those of the nineteenth century. Then current theory, including Morgenthau's theory, did not account for them. Fortunately I had ordered a copy of Ashby's *Design for a Brain* from Blackwell's in England. As soon as I read Ashby's book I appreciated the relevance of systems theory for understanding the differences between international systems. That is what led to my writing of *System and Process* in the next year.

8
Realism and Theory

Many contemporary realists, who are influenced by the philosophers of ordinary language, think that a realistic account of the world is unrelated to theory. However, as Newton knew, every application of theory, whether general or systems theory, or invocation of the relevance of a proposition, rests on pragmatic assessments of the relevant states of the world. I think the mistakes of realists arise from a failure to understand what it means to say that a general theory is deductive. As I noted in the first chapter, Kepler's theory cannot be directly derived from Newton's theory.

The designs of products or of policies cannot be deduced from the theorems of a theory. These theorems set constraints on what can work. Thus, for instance, in designing an engine, an engineer may use a theorem of physics to show that a particular form of wiring will not fit productively the other pragmatic aspects of the engine. In this sense theoretical physicists are realists who use pragmatic information. Thus, the emphasis on realism does not distinguish theory from pragmatic practice although its advocates apparently believe they are saying something that theorists ignore.

If a person who knew nothing of physics made a pragmatic assessment of how different engines work under different conditions and called this realism, it would not be an alternative to the use of theory, which might enable an engineer to understand why a type of fuel would not work in a particular type of engine. A maker of foreign policy needs a good map of the relevant factors of international relations before choosing a foreign policy. If he has such a map, then he may be able to use it by applying theory to a relevant issue. Realism in the sense of pragmatic description is *complementary* to theory. Theory, unlike a maxim, as I will show in this

chapter, permits an agent to reach a conclusion that is not contained in pragmatic assessment.

Theory provides knowledge that a maxim cannot provide. In the case of a systems theory, this is because the essential rules of a system constitute a foundation for making inferences. Because the essential rules of a particular type of system are in a state of equilibrium, a deviation with respect to one of the rules will have a focused effect on one or more of the other rules, which will yield a projection about how the elements of the system will shift. If an agent does not like the focused projection, the agent has a starting point for examining the costs of avoiding it. This is how theory adds to pragmatic assessment. The maxims of the philosophers of ordinary language, as I will show, do not perform a similar function.

When international relations experts copied the methods of the philosophers of ordinary language by using the maxim of balance, they inherited the weakness inherent in that choice. So-called realism is irrelevant. An advocate of systems theory when designing a policy might refer to the same pragmatically-determined real world elements as the realist. If a deviation with respect to one of the rules was upsetting equilibrium, the systems theorist would focus on how changes in the use of other rules could be employed either to restore equilibrium – or alternatively to accelerate change if that is what is desired.

Because some realists seem to believe that theories must include agency, it is useful to make a distinction. Application of a theory, including a systems theory, closes the world. Thus, although agents may be included in a theory, agency is always external to it. The failure to understand this produces puzzles, including those attributed to the concept of freedom of the will, which I discussed in the addendum to Chapter 3. These puzzles can be avoided by recognizing that agency is always external to theory, even though agents may be components of a theory. The object language is always a product of a recursive procedure in which the current phase is open while the previous stage is closed.

Realism and maxims

The rejection of theory and the resort to maxims by ordinary language philosophers is central to what a great many students of international affairs now call realism, the defects of which I will comment further on in Chapter 9. However, it amuses me to comment on Santayana's much-quoted saying that those who do not learn from history are condemned

to repeat their mistakes. The relationships between history and policy are more complex than those who paraphrase Santayana understand.

When Hitler marched into Czechoslovakia subsequently to Munich, Chamberlain 'corrected' his mistake by giving Poland an absolute guarantee. This meant that a German attack on Poland would lead to war with Britain and France. Stalin would not have dared to enter into a pact with Hitler in the absence of this reassurance. With that reassurance Stalin could gain defensive depth from Poland and the Baltic states. Without the pact with Stalin even Hitler would have met resistance from his generals who were deathly afraid of a two-front war. Although I do not claim that World War II would have been avoided if Chamberlain had not given Poland a blank check, I suggest great caution when using history in the search for maxims.

It is not feasible to do history in the absence of relevant theories even though history is not a theoretical discipline. For instance, it was required in India at one time to eat food with a hand not used to clean one's private parts. If one who did not know this had dinner in India and noticed afterwards that the other participants avoided him, he could describe this behavior in a letter but might be unable to relate the behavior to anything that he did.

Wittgenstein and ordinary language philosophers believed that such cases could be understood by systematic language games that distinguished cases from each other by increments. However, it is easy to see that a direct route to knowledge of how to behave in an external social system is given by a systems theory of that social system, while Wittgenstein's method would produce at each state of inquiry such an expanding infinity of paths from the previous starting states that it would be extremely difficult to trace them.

Some ordinary language philosophers reject theoretical approaches to finding meaning in social history because they identify theories with propositions in which one object has universal connections with another. They think that such universal propositions do not apply to history. However, universal generalizations do not apply to physics either. The theorems of physics do not mention physical objects. They deal with the relationships among the qualities of objects. Although systems theories do mention physical objects, their ability to provide first approximations varies with differences in the analytical elements of the theories, for instance, theories of traditional tribal mid-Eastern families and modern American families.

The more important point is that the process of developing theories is not itself a subject to which theory can be directly applied. Theory

is taken into account, for instance, when a scientist wishes to explain why Einstein developed his special theory of relativity. Einstein himself explained that contemplation of Maxwell's theorems and of the Lorentz contraction led him to anticipate the theorems he offered even before he was aware of the Michelson–Morley experiment. Thus, the theory Einstein developed emerged dialectically from the consideration of intervening analyses within the then current world view and not from an overarching theory.

Some philosophers of ordinary language, like some advocates of realism with respect to international relations theory, find it difficult to impute meaning to history in the absence of generalizations that provide guidance for avoiding errors of the past. If generalizations are not possible, they find it difficult to see how one can avoid the errors of the past. They offer what they call 'useful truisms'.

There are two major problems with useful truisms. In the first place, philosophers of ordinary language misunderstand how analytical theories work. For instance, the application of the laws of physics to the design of an automobile is a complex process in which different designs of engines need to be related to materials and fuel. The laws of physics are critical to design but do not determine design or the evaluations of different designs. They help in distinguishing between designs that may work and those that are unlikely to work by showing how a particular change in a design is likely to produce changes throughout the mechanism. The truisms, or maxims, of ordinary language philosophers, on the other hand, do not provide an equivalent focus. If they are relevant, they function only as a checklist.

Poison kills

Before I turn to the proposals of ordinary language philosophers such as Scriven and Dray, let us start with a truism that some ordinary language philosophers use such as 'poison kills'. 'Poison kills' is of minimal use unless there is a relationship to a theory of a biological system. If a person is given hydrogen cyanide and dies, the analyst may say that the cyanide deprived the blood of the ability to circulate oxygen, in the absence of which the heart stops. If the person is given an antidote that prevents the poison from stopping the transmission by blood of oxygen, the second factor provides us with knowledge of why the generalization did not apply to the particular case. It provides an explanation from the focus of the human physiological system, that is, within terms of a theory of a particular type of biological system.

Systems theory then can be used to explain what a poison is for particular types of organisms and how and why what acts as a poison that kills one type of organism may act as a medicine that saves another. Properly expressed, it does so in a nomological form in which rules connect the explanandum event with the particular conditions cited in the explanans with respect to the system to which the theory applies.[1]

This introduces a theory of the human biological system as central to the claim that a particular poison killed a particular person. The theory is then applied to a particular death by taking into account a range of relevant initial conditions. Thus, theory may account for a death and an analyst may rely upon this when the analyst uses it in a historical account.

One first must ask what a relevant theory is. In the present case, the correct inquiry would be one based on biological life, not on killings and poisons. Propositions related to properly stated theories, whether of physics or of society, are not merely conditional statements in which 'poison' and 'kill', for instance, are related. A properly applied theory will sustain counterfactual and subjunctive conditional statements *if the state descriptions of relevant aspects of the world are taken into account*. Thus, for instance, the counterfactual subjunctive assertion that a poison would have killed except for a lack of an adequate strength, can be related to a theory of a type of biological life and an account of the state of the system to which the prescription applies.

Thus, even though a particular theory of biological life is not a general theory, the use of comparative systems theory can provide answers that are more relevant than 'poison kills'. The former analysis provides an answer to the 'why'-type question 'Why did not the poison kill?' 'Because it was too diluted'. Thus, contrary to what Scriven claims, theory can be used to provide a good account of particularities of the world that maxims cannot approximate. Statements such as 'All the apples in this basket are red' sustain general conditional statements such as 'If X is an apple in this basket, it is red' but do not answer counterfactual subjunctive conditional questions such as 'If X is an apple and is in the basket and is not red, why is this so?' Such statements therefore are not related to a theory and do not explain in the 'why' sense even if the pragmatic state descriptions of the relevant aspects of the world are taken into account. Because the philosophers of ordinary language do not take into account the complementary character of the analytical and the pragmatic, they confuse theories with universal propositions. However, there is a deeper problem, which I turn to next.

Why maxims and theories are not alternatives

Before examining other maxims proposed by philosophers of ordinary language, it is useful to note that ordinary language philosophers have failed to ask why a maxim such as 'poison kills' is relevant to anything, let alone whether it is an alternative to theory.

If the goal is to kill someone and if the only means of gaining access to the target is poison, then a theory of biological life is relevant to the choice of poison. However, if one can explode a bomb where the target is, a theory of biological life may be peripheral to implementation, or even irrelevant. The issue is one of policy. Given a goal, strategy investigates the best methods to accomplish the goal in a particular set of conditions.

Dray and principles of action

William Dray offers as an alternative to nomothetic interpretations of history the concept of rationality (Dray 1963, pp. 105ff). The concept of rationality, however, is a difficult one. There is no single valid concept of rationality applicable to all situations (See Kaplan 1968c, pp. 494–506). The concept of rationality is useful in explanations only if it can be shown independently that an agent is (or likely is) rational in the given sense.

Thus, we cannot infer that Bismarck, for instance, likely intended X, which he achieved, unless it can be shown in particular that X was in some sense an appropriate objective for Bismarck and that Bismarck was rational in the specified sense. The attempt to use the concept of rationality in explanations, as Dray does, apart from such evaluations, is ineffectual. Dray has avoided theory in favor of a 'principle of action' of the form 'When in a situation of type C, the thing to do is X' only by ignoring essential elements of evaluation.

What is rational in a situation follows from the analysis, not vice versa. It may indeed be the case that X is the thing to do in situation C, but not for Bismarck, or that Bismarck was not rational in the assumed sense and intended Y rather than X. One must be able to show that Bismarck accepted X as a reasonable objective and that he was capable of proceeding and did proceed in a manner that would obtain it. Even more importantly, one must be able to show that the action was rational in the various systems, including the international one, in which Bismarck was placed. Thus, until the relevant theories are incorporated within a

field that is anticipatory to an event, it is not feasible to investigate their role.

The concept of rationality, thus, is not a guide to policy. Its application to policy is a product of analysis, not a guide to analysis. This is one of the flaws of realism with respect to its substitution of a maxim such as 'balancing' for theories. Whether the search for allies is rational in a situation depends upon the situation. The maxim 'act rationally' *does not advance analysis*. Analysis of the case may, or may not, provide a reason *in this case* for believing that a search for allies will provide results superior to alternatives.

The Kaiser's policy, which Bismarck implemented, was irrational in the sense that it introduced sequences of events that reduced Prussian security. A theory of a 'balance of power' system is relevant to that conclusion. However, choice theory is not relevant except in the sense of background information. Even in that sense, it is only peripherally relevant. Bismarck's implementation was rational if he believed that his domestic policies could be pursued only if he accepted the Kaiser's policy in this instance.

With respect to many of these issues it may not be possible to know what is rational in the absence of theory. In this instance, it was Bismarck's implicit understanding of 'balance of power' theory that enabled him to judge the Kaiser's policy as irrational. The maxim of balancing is irrelevant when it is not related either to a theory or to a dense account of initial conditions that shows the need for partners.

In short, the judgment that the Kaiser's seizure of Alsace was irrational follows either from the application of the essential rules of a 'balance of power' system or from a dense practical analysis. When the father in chapter three substituted a lottery ticket for a soda despite the fact that the expected value of the ticket was less than the cost of the ticket, he did so because he preferred this set of outcomes to the previous set, not because he was applying a maxim of rationality. In the prisoners' dilemma, the payoff values depended on three boundary conditions: the values of jail sentences varied inversely with length; the prisoners had no interest in reducing the sentences of their partners at even minimal cost; and they had no method for coordinating their pleas. It was this set of conditions that made the worst possible joint outcomes the preferred choice, not a maxim of rationality.

My 'balance of power' theory, as distinguished from the current maxim of balancing, can be used to examine whether Bismarck's policies were protective of Austria's position because of their agreement with the essential rules of a 'balance of power' system under relevant boundary

conditions. Initial conditions can then be examined to see if they are consistent with this conclusion.

If the seizure of Alsace was irrational, this was so in the sense that it reduced Prussian security by reducing the range of accessible future partners. Because France and Germany were not going to be alliance partners in the future, their incentive to limit wars against each other was significantly reduced. It is a systems theory of a 'balance of power' system that calls to attention the cascading consequences of the seizure of Alsace. A balancing maxim such as that of contemporary realists, unlike use of my theory of a 'balance of power' system, does not support an account of what the likely costs over the long run of the Kaiser's decision were likely to be. As I will show in Chapter 9, the balancing thesis of realism pretends to add to analyses that can be well conducted without any reference to it.

Laws, lawlike rules, and disposition sentences

I will soon consider an objection by Michael Scriven to theoretical analysis in history. Before doing so, it is important to understand the different types of nomothetic enterprises that can be incorporated in historical accounts. It is useful for this purpose to distinguish lawlike sentences from laws, and disposition statements from both. A lawlike sentence, unlike a law, is not part of a general theory in which the impact of an initial condition can be derived from a theorem. For instance, the rule to combine against a hegemony-seeking actor, which is one of the rules of my 'balance of power' system, is a lawlike statement. The impact of an initial condition with respect to lawlike generalizations is a matter of judgment to which an assessment of the density and the fit of evidence applies.

If even lawlike statements cannot be found, disposition sentences sometimes can be formulated for purposes of explanation.[2] Such sentences state the sufficient conditions for the presence of a disposition, for instance, for a metal to have great tensile strength or for a person to behave with empathy. Whether the sufficient conditions for the presence of a disposition are in fact present is a matter of judgment.

Disposition sentences are crucial in connecting human nature to issues of justice. Empathy for an other, for instance, is a disposition that is related to a willingness to accept costs for an other's benefit. Whether the price will be paid depends upon the cost and the strength of the disposition. This is judged by an examination of the density and the fit of the evidence. If the fit is good, one can state that the actor paid the

price because he was disposed to do so. If one notices that certain types of prices are paid in one society and rejected in another, then one may note that one type of society is more likely to elicit empathic dispositions in these types of situations than is another. This then can be entered into the theories of the different societies. Efforts to found justice upon a set of virtues founder because virtues, like tensile strength, are dispositions. Their meanings are related to the system to which they apply.

Scriven's objection to nomothetic accounts in history

Michael Scriven's discussion of theory with respect to history reflects his misunderstanding both of theory and of historical analysis. His belief that Hempel's account of theory cannot account for particularity is incorrect. Surely he must be aware of Newton's use of initial and boundary conditions. When these are taken into account, particularity is approached more successfully than by the 'useful truisms' Scriven offers as a substitute for theory.

There is no a priori method for taking initial and boundary conditions into account. Judgment is required. And the consequences for designations, as is also the case with respect to, for instance, biological and geological evolution, may vary dialectically, with the choices that are made. Scriven and his cohorts do not understand how deductive, let alone systems, theories can be used. And, like Wittgenstein, they do not understand why their objections to theory emerge from their misunderstandings of how deductive theories are used by physicists.

Useful truisms

When Scriven offered what he called 'useful truisms' as a substitute for a set of essential rules or a set of theorems (Scriven 1959a), he removed from his arsenal the complexity of a theory that focuses research and that permits first approximations by formulating comparative systems.

Scriven was aware that his 'useful truisms' had many exceptions. He was not aware that it was his rejection of theory that produced so many major exceptions. He attributed them to temporal differences. Scriven, thus, wrote as if learning were genuinely time-dependent in the sense that time was the essential difference that made an identical stimulus produce different behaviors. This is only rarely so, for the relevant difference is the difference in the informational state of an agent and in the changed initial conditions of the world. If a child who touches a glowing

ember refrains from touching another glowing ember, it is not time that produces this difference.

The interesting thing about the process of explanation is that, contrary to Scriven's contention, increased specification does not make for mere descriptive particularization but instead occurs within the framework of a theory with explanatory power. These are no more single instances than would be the claim that an engine failed to start because someone had removed the battery. This latter claim rests on a theory of how this type of energizing system works.

Scriven adverts to a number of historical generalizations, such as 'power corrupts', that he offers as useful truisms that he believes do not involve theory. The poor state of historical writing misleads him. These co-called truisms have little positive explanatory power and may even be harmful to understanding. 'Lack of power corrupts' is also true and it is a much more powerful negative statement than 'Poison does not kill'; Scriven's truism does not tell us anything about the type of system within which power corrupts or within which lack of power corrupts. Or about which roles or personality types in which types of systems are affected by power or the lack of it or how they are affected by boundary conditions. Theory and the specification of the states of the relevant system are required for this.

Lack of theoretical articulation, and the consequent lack of an effort to search for boundary conditions relevant to theory, is destructive of the power of historical understanding. An explicit awareness of boundary conditions is even more necessary in history, where it is more difficult to determine relevant parameters, than in the physical sciences where the necessity of articulating boundary conditions is well known. Although 'poison kills' is a true statement – the effects of poison are dependent on the kind of poison and its strength as well as on the physiological system into which it is introduced, its condition, and other circumstances – in practice the lack of adequate articulation reduces the utility of 'poison kills' less than 'lack of power corrupts' vitiates the utility of 'power corrupts'.

If, however, we attempt to deal with a system of *articulated and interconnected* relations, as is true of any good theory, and if we attempt to state boundary conditions and relevant evidence, then the qualifications that are necessary to produce inferences are informative, meaningful, and explanatory. They draw the relevant properties within an articulated field. This is why systems theory is the appropriate method with respect to international relations theory.

For instance, with respect to the types of theories I advocate in the field of international relations – really theory sketches in which the initial and boundary conditions are spelled out only when influential – my 'balance of power' theory can be used to explain why the results inferred from the theory were produced for different reasons in classical Greece, why the behavior predicted by the theory did not occur after 1870 in Europe, and why in the cases of the Greek-Macedonian system and the Chinese warlord system, a more reasonable explanation of the roll-up of the system by a peripheral power is produced by the theory than by Toynbee's hypothesis (See Kaplan 1969, pp. 209ff).

Because boundary conditions are very incompletely known, because the criteria for confirming or falsifying evidence are loose, and because the properties of the system are not known to be additive, judgments of the truth of such 'theories' are not possible in a definitive sense. However, because an effort is made to relate initial conditions to a theory and because some boundary conditions and some criteria for evidence are specified, the effort is *less distant* from science and from explanation than are more traditional approaches.

History, on the other hand, deals with the weighing of evidence with respect to a sequence of events. Thus, for instance, if one runs out of a burning building, it would not be useful to say that theory shows that this is the expected result even though we may believe that this result is likely to occur with a high degree of probability. This claim is not related to a theory of a system in which behavior differs from that of other systems on the basis of regularities. It is propositional and rests on the hypothesis that this is how most individuals would behave in most situations. If a mother with a child in the building runs into it, an explanation will rest not on a generalization but on a weighing of the factors that were likely to have influenced the mother.

Problems in theory building and explanation

Scriven's criticism of Hempel on the subject of particularization is incorrect. Because even general deductive theories can be used to make deductions only within the framework of initial conditions and because these change as more or subsequent considerations are brought into play, a theory can be adapted to most relevant particularities. This is inherent in Newton's methodology. And because systems theories apply only to specific types of systems and the sets of rules that apply to them, they can be applied to particularities more successfully than the only vaguely applicable generalizations proposed by Scriven and his colleagues.

Scriven's thesis of the poverty of theory *implicitly* restricts the application of theory to two-body problems within the framework of a highly confined experimental setting. Working physicists do not make this mistake.

A particularized engineering solution for a problem involving physics is related to laws, for instance, the substitution of one element of an engine for another. And the evaluation of international problems more often than not will be impeded by ignoring the rules of international systems theories *should a relevant system exist*.

An important second factor also comes into play. In the physical sciences the concept of equality in laws embodying mechanical equilibriums is literal because there are independent measures for the qualities denoted by the variables and literal equalities are asserted. When we turn to examples of homeostatic equilibriums – and social or political 'equilibriums' are homeostatic – we no longer have independent measures or literal equalities.

In the social sciences self-consciousness with respect to system differentiation is particularly important. We do not have, for instance, consistently good measures for demands and supports considered independently, let alone any method for equating them or for measuring system efficiency in processing them. The concept of equilibrium replaces that of equality. This is why I always put quotation marks around 'balance of power' with respect to my theory despite the remonstrance of an editor who said 'once is enough'.

If we have good theory sketches of why a type of subsystem performs in given ways, we will then have partial explanations of why particular kinds of boundary disturbances will produce particular kinds of responses and of whether those responses are likely to dampen or to exacerbate the disturbances. These partial explanations will involve centrally those characteristics of a system that distinguish it from others.

Thus, for instance, Communist and authoritarian regimes function differently against both country and city guerrilla disturbances. These differences between Communist and authoritarian regimes can be understood, if only in part, in terms of differences between them – for instance, control mechanisms, ideology, and so forth. For this reason comparative method rather than general theory is a preferable method.

The things that are true of all political systems are truistic in the bad sense of the term. We do not deal here merely with a question of comparative boundary conditions that affect the operations of a political system (although that also constitutes an argument for comparative method). More importantly, comparative method, in this case, draws attention to

basic differences in the systems themselves and in the theory sketches that are used to account for them.

In the social sciences, a single theoretical sketch will only rarely, if ever, encompass the various aspects of the social and political world. This means that the approximations between our models or theories and the phenomena to be explained will almost always have much more in the way of residue than in the case of the physical sciences. Moreover, different theories will apply to different aspects of the same situation or problem.

The distinctions between physics and social science are by no means absolute, for there are some aspects of social and political science to which reasonable 'theoretical' approximations can be made, and there are some aspects of the physical sciences where engineering applications of theory involve a welter of particularities. If, for instance, Truman wanted to know whether American fission bombs would destroy Japanese cities, he had to know whether these bombs would be properly constructed and placed on the bombers, whether the bombers would reach their target, whether the bombardiers would release them, as well as whether the bombs would work.

Historical explanation and diversity of framework

History consists of pragmatic judgments. If one wishes to intervene in history, one starts with a pragmatic judgment about relevant initial and boundary conditions. The difficulty in which ordinary language theorists immerse themselves stems from a failure to distinguish theorems from the initial and boundary conditions to which a theorem (or essential rule) is applied. Let us reconsider 'poison kills'. If we decide to poison someone, we need to know whether the poison will work on that person. Thus, we need to know whether in the particular case a particular person is susceptible to a particular poison, for instance, peanuts. However, that is peripheral to the decision to kill someone.

When we try to explain why President John F. Kennedy acted the way he did in the Cuban missile crisis, we can offer explanations from a wide variety of frameworks based on different, but not necessarily contradictory, theory sketches. Each framework has only a limited bearing upon the event it is designed to explain. Because the meanings of names vary with their use, it is important when explaining events to relate the names in relevant theory sketches to their uses with respect to particular problems.

The fit between theory and application in social and political history is not nearly as good as that of macrophysics. We can attempt explanations

within the framework of alternative perspectives, for example, those of strategic theory, of national politics, of organization theory, of intrigues within the executive network, and so forth, each one of which gives us a rather poorly tailored fit.

If a great many of the perspectives seem to limit choice to a few alternatives, or even to a single major alternative, then by a process of identification of the patterns with the situations, we regard the framework of choice as so restricted that the weight of the accumulated evidence seems to us to overcome the poorness of the fit of the individual theoretical sketches considered separately. The sketches reinforce each other rather than detract from each other.

Our explanatory power here is truistic in a sense, although not in the sense that Scriven suggests; our generalization is that the more restricted the choice pattern, the more likely an actor is to have made a particular choice, so that if it does something different from what we expect, that is what requires explanation. A truism such as 'power corrupts' does not permit a restricted choice theorem. But good systems theories in favorable circumstances permit them.

One of the great failures in the analysis of international relations by historians stems from the fact that with very, very few exceptions they have no comprehension of the existence of a macroframework within which diplomatic behavior occurs. They thus often involve themselves in a morass of microevents that contribute a wealth of information that diverts attention from the first approximations that have more direct bearings on events. By substituting a maxim such as 'balancing' for a relevant systems theory, advocates of realism ignore an element that in some cases may be predominant with respect to choice. In this respect, contemporary realism regressively destroys knowledge.

Realism and policy

If realism means only that a state, from the standpoint of pragmatic analysis, does what it must to maintain or improve its position, this would mean that realism would have a different meaning in each type of international system or in each set of circumstances. Analysts might disagree about appropriate policy but none of the recommendations would add to pragmatic analysis.

Applications of my theory of 'balance of power' systems to sequences of events in Europe of the eighteenth and nineteenth centuries, on the other hand, show that some critical sequences are *materially entailed* by the rules, that is, by the *complex interrelatedness* of the essential rules of

a 'balance of power' system, which function as a *corporate complex*. The set of essential rules, thus, permits theory to be a focus for an estimation of tendencies and results that makes use of new knowledge. I will show in the next three paragraphs that the Kaiser's seizure of Alsace Lorraine materially entailed system destabilizing consequences *that involved relations among elements of the complex of essential rules of a 'balance of power' system*.

The European system of the eighteenth and nineteenth centuries had five essential actors, the *lower bound* for system stability. They had comparable capabilities that distinguished them from inessential actors. Nothing in the internal aspects of the essential actors was inconsistent with application of the essential rules. And the rules, including the decision to combine against Napoleon, were followed until 1870, when the Kaiser committed a major violation of the essential rules. The set of essential rules is a corporate whole that is central to the equilibrium of the system. One essential rule specified that essential actors would not allow their attitude toward other essential actors to factor into their alignment decisions. A second essential rule called for limiting gains from war. These two rules constituted part of what adequate policy meant *in that system*.

The seizure of Alsace Lorraine was a step function that materially moved the 'balance' system from its equilibrium. It led to enduring revanchist feelings in France. As a result, incentives to apply two essential rules – that which specified treating all other essential actors as potential role partners in a five-actor system and that which called for moderating gains from wars – were seriously impaired. Because the issue of Alsace Lorraine played so large a role in French policy, France and Prussia would not be allies in a future war. This placed very important limitations on how competing alliances could be formed. Because France and Prussia would not be allies in a future war, the incentive to limit their aims versus each other was sharply diminished.

This was not sufficient to destabilize the system but it did produce the rigid alliances of the pre-World War I period, a virtually unlimited war, and what Keynes called the Carthaginian peace. *This is the type of system-related reasoning that narrative or propositional accounts do not foster.* This is why a critic of the Kaiser's policy could have used the essential rules of a 'balance' system to prejudge the likely dysfunctional consequences of the seizure.

On the other hand, a student of Morgenthau's original proposition, which lacks a set of essential rules, would have been required to start from a thesis that merely told him to choose effective allies. Thus, my 'balance

of power' theory adds to knowledge while neither Morgenthau's original theory of the balance of power nor the current maxim of balance, of which Morgenthau was not aware, does so.

Realism as a general doctrine loses the theoretical focus that allows the set of essential rules of a system to provide first approximations for policy. It does not distinguish between the types of worlds in which policies are conducted. It does not distinguish among the types of actors that participate in international systems. It does not distinguish between the types of values various types of policies in various types of worlds implement.

When the doctrine of realism is treated generally, as it is in current form as a *balancing doctrine*, it is detached from the issue of theory in a world in which different types of international systems may become manifest. A selection of 'balance' from a check list does not point to the particular consequences that follow from the absence of balance. It points out merely what already is known to all practitioners: that the failure to choose adequate allies may lead to loss in war.

Realism and morality

By ignoring the complementarity between theories of international systems and pragmatic accounts of events in the world, realism, in its contemporary usage, loses the complementarity between initial conditions and essential rules. However, realism originally meant something else to Morgenthau. It meant the dominance of power over morals with respect to national policy. Morgenthau actually denied the existence of international interests. Only national interests were real, he said. And moral interests, including international interests, were irrelevant.

If that position were applied generally, absurd consequences would ensue. There would be none of the national interests that Morgenthau sanctified but only the interests of competing organizations within a nation. No organizational interests but only individual interests within an organization. No individual interests but only the competing motives of an individual. However, every time a trade treaty, for instance, is signed, the signatories believe they are implementing their joint (system) interests by curbing their individual interests. And they likely see such treaties as both practical and moral solutions to problems in the international system.

Because many of my critics knew that the essential rules of my systems took capabilities, which they incorrectly identified with power, into account, they identified my position with Morgenthau's. However,

there are a number of relevant interests, not just national interests. I have analyzed the different relations of agents to various types of organizations and to their roles in them. I pointed out that how one evaluates choices of policy depends on one's organizational responsibilities and values. Thus, what is good for a state in terms of power may not be an overriding good. And patriotic Germans might well have worked for the defeat of a Nazi state on the ground that the Nazi state perverted what good Germans stood for. Because Morgenthau did not make these distinctions in his theoretical writings, his version of realism, in principle at least, apart from its philosophical shortcomings, rules entirely out of court the important moral components of proposed policies that decision makers need to take into account when formulating policy.

When the concept of realism got divorced from the complex set of interrelated rules that constitute an essential aspect of any system, the relationship of policy to capabilities and values was divorced from a framework that permits them to play their appropriate roles in achieving desirable ends. Idealism suffers from a comparable flaw. By neglecting to investigate how ideals can be achieved in a given system in its circumstances, idealists, in the old phrase, fail to achieve the good because of their pursuit of the best. Although idealists sometimes did think in terms of world systems, they usually ignored the boundary conditions that would be required for such systems to operate in a durable manner. *Realism and idealism* both fail to incorporate the *complementary* perspectives that are essential foci for analysis.

Part IV
Applications

9

The Retrogressive Impact of Contemporary Realism on International Theory

The current emphasis on realism in international analysis rests on two theses, one negative and one positive. The negative thesis is the belief that systems theory has been undermined by Stephen Walt's (1987) apparent falsification of Kenneth Waltz's (1979) proposed systems theory of international relations. Waltz's projected theory was not a systems theory, even though he thought it was. And Walt's study did not refute it, even though Waltz gallantly conceded that it did. Because Waltz did not understand how analytical theories, whether systems theories or general theories, are structured, his proposal for a theory did not permit an evaluation.

The positive thesis rests on the belief of philosophers of ordinary language such as Scriven that use of theory cannot cope with the complex aspects of the real world that are relevant to policy. This has fueled the arguments of contemporary realists who, transforming Morgenthau's attempt at a general theory into a maxim of balance, believe they have found a key to foreign policy analysis.

Theory and design

Contemporary realists misunderstand the relationship between theory and design. They do not understand that theorems and essential rules are applicable to the designs of policies but not to their direct deduction. Because realists, following common language philosophers such as Scriven, accept Frege's account of meaning, they reject theory in favor of a maxim that is so distant from the particularities of the world that it does not limit inferences in a useful fashion.

The program that underlies the rejection of theory by Scriven and other ordinary language philosophers cannot be carried out. Linsky argued that if one could have a catalog of all the transactions that could take place, then one might not need a theory. But no such catalog is possible. As in the case of the fictional Tristram Shandy, who lived forever but who took a year to write each day's autobiography, such an account eventually will be infinitely far behind Shandy's current status but also infinitely unrelated to his original status because the initial conditions that qualify choice and pragmatic designations would give rise to evolutionary branchings rather than to a linear evolutionary path.

A maxim, like those of ordinary language philosophers, rather than adapting policy closely to the world, casts a net so wide that it is virtually unrelated to a pragmatic account. In this sense, contemporary realism, unlike theory, rather than producing pragmatic knowledge of the world, undermines it. The maxim of balance in practice functions merely as part of a check list.

Suppose John Smith declares war on France. His use of force is crushed and he is incarcerated. It would not be useful to comment, although it would be true, that he likely would not have made this decision if he had taken into account the fact that he did not have an army that would carry out his orders. Yes, there are many occasions on which the search for allies is useful. But no practitioner ever doubted this. And the check list does not distinguish, as a theory can, between the elements that are relevant in one case and not in others.

When a theory, on the other hand, is used to take *real-world initial and boundary* conditions into account, it directs attention to the most relevant factors. For instance, an anthropologist who is examining a traditional Middle Eastern family will know that a daughter who chooses a suitor of a different religion will meet a harsh response that will be reinforced by other elements of society. If this does not occur, the anthropologist will search for the factors that account for this. It is this program that ties systems theory to the world in a manner that is superior to the balancing maxim of realism or those of the ordinary language philosophers.

The concept of power

The use of the concept of power in the current literature traces back to Morgenthau's attempt to achieve generality in the absence of common measures by placing all possible influences within the concept of power – even though the various capabilities of a state are not of the

same type let alone susceptible to a common measure. Morgenthau apparently thought that expanding the concept of power to include all possible influences would restore generality in the absence of common measures.

Morgenthau did not recognize that he had reverted to a pre-Galilean thesis that is inconsistent with the existence of a theory. Moreover, this reversion obscured the role of morality. If nothing that can influence results is left outside of power, how can morality influence policy unless it also is a form of power? However, if morality is a form of power, in what sense should it be excluded when choosing allies or designing a strategy?

An allied error in the current literature lies in its placing agency within a theory. No theory can be applied unless the open world is closed for purposes of examination and choice. Every productive experimental physicist carefully controls the factors relevant to an experiment. Placing *agency*, as distinguished from *agents*, in a theory prevents closure and produces an infinite regression. This problem has been analyzed in the game of bridge. If it is considered highly preferable to play the queen first from a queen/jack combination, the play of the jack shows that one does not hold the queen. If a player holds queen/jack and wants to deceive the other player, he may play the jack. However, the other player knows this, and so on and so on.

The same problem emerges even if an agent takes into account only his own alternative calculations or actions, which then become the basis for a new calculation, and so on and so on. Thus, making agency, as distinguished from the state of an agent, part of a theory will produce an infinite regression because every estimate or evaluation becomes a new element of a world view or partial world view rather than part of a closed account. This regression can be avoided in the *formulation* and use of a theory by recognizing that agency applies to the process of applying theory and that it is not part of a theory. Otherwise knowledge of initial conditions remains open and the world in which applications are being made continually changes during the process of evaluation. *This is why theory requires an analytic form that states the relevant equilibriums. Because this analytic form is applied by agents, it is in a complementary relationship with pragmatics.*

Realists and theory

The theses of Hobbes, Morgenthau, and Waltz are propositions, not theories, because they are based on a single relationship and lack a complex

of interrelated lawlike statements. Hobbes's proposition can be stated as: in order to avoid the state of nature in which life is 'solitary, poor, nasty, brutish and short,' a Leviathan is formed that monopolizes power. Morgenthau's (1948) proposition can be stated as: in order to avoid a catastrophic loss in a state of nature (anarchy), states join alliances to defend against rival alliances. Waltz's (1979) proposition can be stated as: if actors are eliminated, others will replace them.

The concept of power has no analytical role in Morgenthau's proposition. In the 'theories' of Hobbes and Morgenthau, power is not a concept that is related analytically to other concepts in a theorem or in a complex of theorems, which is the factor that makes the concept of energy productive in physics. Thus, it cannot function in a theory as energy functions in theorems in Newtonian and relativity physics. 'Power' in the theses of Hobbes and Morgenthau is a combination of different things.

Morgenthau's pre-Galilean concept of theory suffered from multiple confusions. The concept of power deals with the qualities of objects. But his acceptance of the thesis that morality is irrelevant invokes a behavioral characteristic that cannot be related to the qualities of objects. Thus, whatever the pragmatic value of Metternich's understanding of international affairs, Morgenthau's attempt to treat it theoretically made no sense.

However, the implicit pragmatic propositions of Hobbes and Morgenthau, as distinguished from theory, are reasonable in some cases, depending upon the circumstances of the world in which they are applied, and unreasonable in others. But, as in the case of 'poison kills', they do not perform the significant functions of a theory. They do not focus initial expectations concerning the impact of particular interventions because such interventions are not related to a corporate complex of rules within the framework of boundary conditions. Such a complex does not exist, even potentially, in their formulations. *And the role of evaluation is side-tracked by Morgenthau's regressive belief that power is a general causative factor in politics independently of the role of an agent who is external to a theory*.

The apparent usefulness of realistic generalizations arises from considerations like those that follow. It is usually a mistake to lose a war. And there often are relationships between the capabilities of a state, either independently or in association with allies, and the results of wars. If one wants to understand the sequences that led to defeat in particular cases or that led to success in wars, history may provide useful information.

This also is true in physics. If one wants to understand the process in which Einstein's theory replaced that of Newton, one must refer to a series of experiments and interim theorems such as those of Maxwell and the concept embodied in the Lorentz contraction. A historian may give an excellent account of the events that led to the development of Einstein's theory without understanding the analytical elements of the theory. However, even noted physicists may not understand a theory of physics if they read its analytical elements as carelessly as my critics read *System and Process*.

If the historian is writing about several situations in which the systems are different, analytical theory may be crucial in understanding the differences in consequences across them. Thus, if one wants to estimate the prospects for gaining allies, one must take into account the type of international world in which this effort is made. A proposal for distribution of spoils that might be desirable in a 'balance of power' system might be harmful in a bipolar system. A study that lacks a stage of analysis in which different systems have different complexes of interrelated rules is restricted to its particulars. Like other pre-Galilean methods, it lacks the focus that permits first approximations.

Morgenthau's attempt to produce a substitute for an independent measure by combining influences showed that he did not understand how measures are employed in scientific systems. By treating power as anything that can affect an outcome, Morgenthau, rather than emulating the methods of modern science, as he thought he was doing, retreated to a pre-Galilean methodology in which a conglomeration of related and unrelated factors are *estimated* as producers of results. These potentially are infinite. And their interrelationships will impede analysis. Thus, Morgenthau's thesis did not engage the complementarity of analytics and pragmatics.

Knowledgeable and clever people often can make good propositional estimates and some cases may be sufficiently similar to provide good insights. However, to view the success of such estimations in diplomatic studies as proof of a balance, for instance, is a non-sequitur for there is no properly stated analytical theory that they complement. To call such judgments realistic adds nothing to the analysis. Insofar as these judgments are presumed to rest on the thesis of a balance of power, their failure would mean only that an incorrect choice or estimation of relevant factors was made or that mistakes regarding the effectiveness of the components taken into account were made. Their success would mean only that correct judgments were made.

Such judgments at best are of the order of 'he placed the vase on a shelf carelessly and it fell and broke' or 'it fell and would have broken except that it was thick'. A physicist can use theory to explain why it broke in one case and not in the other. An observer on the other hand is making a judgment based on experience. This may be useful in some circumstances, particularly if different situations have a lot in common. But it lacks the power of theory.

Morgenthau's 'theory' was a proposition. It cannot be falsified because, when everything that can influence a result becomes an integral part of what is called a theory, the side that wins by definition is the stronger side. Or, if there is a stalemate, there is by definition a balance of power. Given the result, the historian now reevaluates the factors to coincide with the result. If the analyst resorts only to propositions, he has no ground for distinguishing the cases in which the generalization is expected to apply from those in which it is not so expected. And the evidence used to support a judgment of balance is essentially tautological.

The seizure of Alsace

An analytical theory requires a *complex* of rules or theorems. The complex of rules, in the case of a systems theory, is in a state of internal equilibrium and in external equilibrium with the elements to which the rules apply and with boundary conditions. This permits applications to produce complex effects within the system, some of which reinforce stability and others of which decrease stability. This is what makes the account theoretical rather than propositional.

Because my 'balance of power' theory is a properly stated theory, it materially entails the instabilities resulting from the Kaiser's seizure of Alsace Lorraine. One of the rules deals with treating all potential role partners as legitimate bidders. This keeps open the widest possible range of partners in what was in effect a five-actor system. Limiting gains from war assists in keeping open the range of potential future coalition partners and is consistent with building a winning coalition and with avoiding a destabilizing loss. However, once the Kaiser seized Alsace, Prussia and France were no longer possible coalition partners. Hence their incentive to limit gains versus each other was sharply diminished. This more likely than not at least partly accounts for the rigid alliance systems that subsequently formed and the relatively unlimited war aims that ensued. The essential rules, a requirement for the existence of a theory, thus, are critical to understanding why the sequence of events

that followed the seizure of Alsace occurred. It *adds to knowledge* in a way in which a check list cannot.

Realists, who rely on maxims such as balancing, have nothing comparable to the set of essential rules that can provide guidance. They present particular judgments with respect to comparative strength as proofs of a narrative account. Their analyses of particular historical sequences in some cases may be convincing, but the interpretations they place upon them are instances, although this is done unintentionally, of the magician's trick of switching the coin from hand to hand when the audience is looking elsewhere. Realists do not base the apparent accordance of descriptive results with their generalization on measures of the strength of the influences. Indeed, given the vast number of factors included in the concept of power, the concept of even a rough judgment makes little sense in many cases. Instead realists more often retrospectively infer the strengths of the influences from the results. They then accept this as proof of a theory or, more loosely, of a maxim.

On the other hand, if all that balancing means is that a group of nations facing war is likely to attempt to gain additional allies, this is probably correct in many circumstances. It will be irrelevant in many circumstances. And it does not take into account any of the organizational aspects of the international system that may affect these attempts. In a 'balance' system, given the small number of essential actors in the system, the short-term consequences of shifts of alignment take precedence over moral concerns, although they do not negate them. In a loose bipolar system the longer-term effects of shifts of alignment take precedence. A foreign policy that does not take systems into account will be dysfunctional. And use of a maxim such as the balance maxim of realism will be largely irrelevant to the understanding of events.

The way in which Morgenthau (likely incorrectly) read Metternich with respect to the irrelevance of morals and the centrality of power turned Metternich's appreciation of the need to maintain one's alliance possibilities in the international system in which he participated into a universal, and overriding, principle. This followed from his basic misunderstanding of the character of theory in modern science. It ignored the distinction between applications of a theory and practical judgments of particular states of affairs. *And it ruled out of consideration those moral concerns that may be appropriate in the choice of policies when they do not undermine a state's ability to preserve its territorial integrity or values even more important to it than its territorial integrity*.

The use of history, which philosophers of ordinary language emphasize, is important but it is no substitute for theory. Historians have been

known to state after a historical account something like 'and that is how the balance of power worked in this area between these dates'. Their studies may provide useful information about how and why elements in the course of events occurred, but their realistic approach is likely to miss crucial evidence *in cases in which the systems are different in type or in which the designations of objects have shifted*. This is because such an account is not complemented by a theory. *It does not give one a focus for anticipation that distinguishes it from what would occur if the system were a different one. As in the experiments critiqued by Langmuir,* which are recounted at the end of Chapter 1, *it may produce a generalization that is far from fitting the case*.

The concept of realism is used by many writers to provide the appearance, but not the substance, of an analysis through ex post facto ad hoc adjustments of accounts to the particulars of cases. However, what works will vary with systems as well as with circumstances. For instance, consider Metternich's thesis that morality is not useful in the choice of allies, a thesis that some realists later expanded into a universal proposition. There is no general theory to which this proposition can be related. Therefore, the claim that this should be an aspect of state policy in a particular case, in the absence of a systems theory, depends upon an analysis of what the relevant factors, the initial conditions, are in a particular case. This is a pragmatic evaluation, the worth of which depends on the skills and knowledge of an analyst. If the contemporary balancing maxim, as distinguished from Morgenthau's attempt at a theory, were correct, the collapse of Soviet power would have led to a shift of allies from the United States to Russia. However, the evolving system of the major actors was not a 'balance of power' system. Its boundary conditions, including but not limited to economic relations, were quite different in density and scope. In particular, the reasons militating against resort to force had heightened importance. America's allies had good reasons not related to territorial defense to shift to the Russian side or to combine to offset the United States. The balancing maxim of contemporary realists in fact is *mired in classical balance theory*. It is virtually irrelevant to many other cases and is jury-rigged to provide an illusion of relevance.

Contemporary realists possess only a maxim, which applies, if at all, only in highly selective cases that likely were never in doubt, even before realists came on the scene. More importantly, in the absence of theory, realists lack a set of essential rules the complex interrelationships of which distinguish cases from each other. Furthermore, because they lack an analytical concept of theory, which includes boundary

conditions, they lack a focus for inquiring whether a generalization that may seem to apply to a case is in fact significantly relevant to the case they are discussing or only superficially so. Their use of the concept of balance plays no useful role in analysis. As they use the concept, one could claim that a builder who employs painters, carpenters, and electricians is engaging in balance and that his use of balance accounts for why he succeeded in building the house.

10

Tribe and Scalia on the Constitution: A Third View[1]

Most Americans understand that a vitally important aspect of the American constitutional system is the rule-of-law. However, few understand what the rule-of-law means as it applies to constitutional interpretation within the framework of the American system. And even professional students of constitutional law seem to be unaware of the *complementarity* of the concepts of originalism and of a living constitution. By ignoring this complementarity, Professor Tribe and Justice Scalia absolutize their positions. I shall show that proper interpretation of the constitution requires application of complementary approaches.

If you read the editorial pages of a newspaper such as the *New York Times*, you will find an occasional letter or op-ed piece by a lawyer or even a federal judge on one or another matter of constitutional law that reads somewhat like this: 'The attempt to enact a constitutional amendment that would permit states to criminalize the burning of the United States flag is an attempt to limit the free speech rights that the First Amendment of the Constitution gives us'. Whoa, let's step back a little bit.

Consider the implications of the claim that the Constitution says there is a First Amendment right[2] to burn the U.S. flag. It is quite unlike a claim that an effort to amend the Constitution to replace our presidential system with a parliamentary one would change an important aspect of our form of government. The Constitution specifies that there will be a president, a legislature, and a judiciary. Nowhere does it assert that burning a flag is in fact a form of speech, let alone a permitted one. Nor does it state, on the other hand, that shouting 'fire' in a crowded theater is not permitted speech despite the imminent danger doctrine.

Until Supreme Court Justice William Brennan's ruling, state laws criminalizing burning a U.S. flag were enforceable. If the Constitution states that burning the flag is free speech now, did it state that it was

not constitutionally protected speech before the Brennan decision? Furthermore, the vote that stated that burning the flag was constitutionally protected free speech was 5 to 4. Suppose one of the justices in the majority died and was replaced by one who agreed with the minority. Would it now follow that the Constitution states that burning the flag is not a matter of free speech?

The belief that the First Amendment says that burning the flag is a protected activity is at best misleading and at worst wrong, even if an occasional federal judge appears to make such a claim. Supreme Court rulings establish positions that the lower courts and the executive are expected to apply. In this operational sense they establish what the Constitution says. However, because decisions of the Supreme Court do not follow in the usual case in any determinately logical way from the Constitution itself, it is possible to argue that they may be bad law – in effect, that the Court misread the Constitution.

A Matter of Interpretation (Scalia 1998), which has a long lead essay by Justice Antonin Scalia and includes critical responses by several distinguished legal scholars, addresses the issue of how one may determine what the Constitution means and, hence, how the rule-of-law applies to its interpretation. Because the central issues that concern us here came out most clearly in the arguments between Justice Scalia and Lawrence Tribe, professor of constitutional law at Harvard University, this discussion of the book is limited to their main arguments. Both have important and correct things to say about the rule-of-law. Each is at least partly correct about the defects in the other's position. Both, along with many other commentators, say little about how the structure of the American political system sheds light on the appropriate role of the Court, and little, if anything, about the extremely important role of the implicit culture in refining the meaning of the text of the Constitution.

The rule-of-law

The great contribution of Rome to Western civilization lay in the rule-of-law: that the rights of a Roman subject under the law were not susceptible to personal revision by a judge or other official person. Almost paradoxically, the meaning of the rule-of-law can be portrayed best through the practice of a system of Roman judges who explicitly made, rather than merely interpreted, law.

Rome extended the rule-of-law to its conquered territories through the praetor peregrinus (a traveling magistrate). The praetor peregrinus had to state the laws that he would apply during each term of office.

Thus, all in his jurisdiction could know the content of the laws that would govern their conduct. Much as sharp contemporary tax lawyers find clever ways of circumventing the intentions of those who word tax law, the inhabitants of Roman territory resorted to clever ploys.

Since the praetor formulated the law he would apply, he knew the intention that governed his choice of text. If the rule-of-law were governed by intent rather than by text, the praetor could have ignored the text, especially if he believed that the person being judged likely did know the intent of the law. However, the praetor applied the law as written, even if this negated the purpose of the law, because that was the lesser evil in a rule-of-law system that eschewed personal elements in its application. He would restate the law at the start of the next period in a way that would outlaw any devious practices adopted in the preceding one. This was a highly practical procedure both because the judge had control and because the entire system of law was simple enough to be easily comprehended in a relatively quick survey.

Thus, although practical conditions of rule in the territories of the Roman Empire required the combination of legislative and judicial functions in a single individual, this pristine conception of the rule-of-law required their complete functional separation, with the judicial function being limited to the mechanical application of promulgated rules.

The problem the praetor faced, and that required periodic revision of the laws he enforced, stemmed from the fact that the application of general rules to particular cases will find some instances in which contradictory results fit the rule and some instances that defeat the rule's purpose, unlike the situation in so-called primitive systems of law in which the highly particular and specific charges of the norms – for instance, in some tribes the payment for a killing depended on the closeness of the relationship between the victim and those recompensed – minimized, even if it did not eliminate, this problem. Thus, some ambiguity with respect to the reach of the law is unavoidable, and the praetor minimized it by placing the text of the law above any consideration of intention.

Scalia's concern with textualism

Consistently with what the rule-of-law requires, Justice Scalia places great emphasis on text. He accuses the Court of often paying insufficient attention to text. A paradigmatic case of judicial failure to honor text occurred in United Steelworkers v. Weber. Justice Rehnquist in his dissent showed by exhaustive analysis that no reasonable reading of

the text could entail the majority's position that racial preferences were permitted. He also noted that Sen. Hubert Humphrey, who proposed the language at issue, secured passage of the law by assuring the Senate that it did not entail the meaning the Court later gave the law, and in the absence of which assurance the law would not have been enacted.

Scalia traces this defect in jurisprudential reasoning by the Court to training in law schools. This training depends almost exclusively on the case method, which responds to the development of the common law. The judge searches for the rule to apply to the case. In subsequent cases, where the rule's application seems undesirable or inconvenient, he employs analogy and searches for a distinction. *Stare decisis*, that is, precedent, builds the rule and successive distinctions into the body of law. However, a process that bases principles of interpretation on analogies, Scalia tells us, may entirely subvert the original text.

It may be easier to understand this analogical process by examining some changes in the meaning of words. For instance, sincere once meant without wax. Person once meant a human individual. Now a corporation is a person but a fetus is not. This process is analogical, and thus, the extensions have only some things in common. As the meaning of a word is extended – as later meanings become analogies of analogies – the later analogies eventually may have little or nothing in common with the original meaning. As courts apply principles, whether of interpretation or law, in different circumstances, the connections with the concrete legal and cultural understandings to which these applications originally were addressed are weakened and become increasingly problematic.

As Scalia also noted, common law methods have a defect: the use of successive distinctions that undermine original meaning. The English have a phrase: 'the exception that proves the rule'. What this means is that the circumstances are so different from those in which the rule is applied that it proves the validity of the rule. For instance, 'promises should be kept'. The exception would be a promise made when threatened with a gun.

If exceptions pile up under a variety of circumstances, then common law methodology may transform keeping promises into the exception that requires justification. Thus, Scalia is correct when he argues that analogical reasoning and other common law methods can easily distort or corrupt law, whether legislative or constitutional, and permit judges to insert their personal policy preferences into the reading of the text, thus violating the rule-of-law.

However, Scalia is aware that there are cases in which the literal reading of a law is clearly inappropriate. Scalia, therefore, must find

some way to guide the reading of text. He distinguishes textualism from strict construction, that is, reading text literally in all cases, citing a case in which a statute called for an increased penalty if a firearm were to be used in a drug case. In this case, the defendant offered a gun as part of the purchase price. On appeal, the Court, employing strict construction, decided that a gun had been used. I agree with Justice Scalia that this was wrong. The decision defies the ordinary understanding in a criminal statute that 'use of gun' means at least possible coercive use.

There are occasions, however, when the wording of a law produces startling results that cannot be rectified by ordinary contextual analysis, as in the case of 'use of a gun', but only by resort to original meaning. For instance, a federal district judge recently ruled that prosecutorial promises to offenders in return for their testimony against others are cases of bribery because 'something of value is promised for testimony', and no exception is made in the text for prosecutors.

It can be argued that the judge's reading was in sharp divergence from original meaning which excluded such an application of the words. To the legislators the universal practice of plea-bargaining involving testimony against others was so self-evidently different from bribery that the issue of its inclusion in the law against bribery did not arise as a possible instance. That is why the judge's decision startled most commentators. If one is distressed by misuse of the plea-bargaining tactic, as many now are, then the rule-of-law response is to pass a new, and nuanced, law, or to subject such plea bargains to closer judicial scrutiny, not to misread the old law.

The unavoidable role of context in interpreting many texts leads to the opposed methods of Justice Scalia and Professor Tribe. Professor Tribe tells us that generalities in the Constitution such as freedom of speech, as distinguished from more specific statements in the Constitution, should be read expansively because the constitution is a living document. However, they could not have been stated other than generally. Although the tripartite character of governmental institutions can be stated with relative precision, it would not have been possible to state what is meant by freedom of speech without writing an encyclopedia, the text of which would change with changes in society. To read their necessary general statement as a license for judicial inventiveness is a negation of the rule-of-law.

Tribe has taken a correlative concept, freedom, and treated it as if it can be scaled in a way that permits the substitution of a greater state of freedom for an inferior one. Even if this were not a violation of the separation of powers, it takes the concept out of the social framework

that gives it concrete meanings in particular societies at particular times. Other jurists do the same thing with the concept of equality. And, of course, considered abstractly, one can always find a respect in which some class or person is constrained or not equal (or equal, as in Plessy) precisely because these concepts have meanings that depend upon different contexts. By this method the judge permits his individual judgment to be substituted for the law. Thus, understanding the weakness in the positions of both Tribe and Scalia requires a brief discussion of context and its role in rule-of-law.

The contextual meaning of laws

No statement of a text or of a historical or legal situation can be totally unambiguous.[3] Just as a complete description is impossible, a complete statement of the meaning of a proposition is impossible, for it would have to include every context in which the words and sentences could be used.

Thus, there is always both an explicit and an implicit context for every expression and for every statute. For instance, take the word 'eye'. We cannot tell what it means unless we know from the sentence or paragraph in which it appears whether a human eye, the eye of a needle, or the eye of a storm is involved. We could not communicate in any substantial way unless the text had sufficient explicit context to narrow the range of meanings. Neither could we communicate in the absence of a rich framework of implicit context, for we would have to recapitulate so many things that we would never finish most statements.

Many of the most important parts of a culture are implicit. They are so commonly understood that they form a background for meaningful discourse. For instance, in the world of classical Greece it was accepted that there is an identity between a name and the essence to which it applied, that the mind is capable of recognizing necessary truth, and that a tree is already contained in a seed as its final cause. None of these is part of the contemporary culture, either implicitly or explicitly. We would be unable to communicate with an ordinary member of society from that era, except after a long prolegomenon in which the implicit assumptions of our society and theirs were spelled out and contrasted.

The implicit culture is important to the law because it provides many of the meanings that refine the global generalities that hide cultural differences. Once a human was a member of the tribe. Now a human is a member of homo sapiens. Honor did not mean the same thing to a

samurai that it does to a contemporary westerner. Killing an unfaithful wife was not murder in some Latin American countries until recently.

Students of a culture may be able to ascertain a range of behaviors that, for instance, are private, in whole or in part, in that culture and a range of behaviors that are not. In the France of Louis XVI nobles engaged in excretory functions publicly. Affairs of state were private. Other cultures may designate these same behaviors quite differently. These distinctions depend primarily on sociological and cultural analysis, and not primarily upon jurisprudential or philosophical distinctions.

Not only are the individual refinements of generalities different in different cultural settings, but they are complexly interrelated. Change in one reverberates throughout the system of meanings in ways that are difficult to understand. The type of expansive rationale adopted by courts, and supported by Professor Tribe – in addition to violating the rule of law – abstracts from this complex implicit culture in ways that are often extremely distortive of both the original meaning, *or at least of closely connected prior meanings*, and of their interrelationships with closely connected concepts, thus producing unintended consequences.

Original meaning and its problems

Justice Scalia's use of original meaning is surely important, even though it may be very difficult to know what the original meaning was. Geoffrey Stone, for instance, has argued that attributions of original meaning are often imposed by courts in cases in which different claims of original meaning can be opposed legitimately to each other. That is correct. But the argument does not carry as far as he argues. The argument that is made for a living constitution would be unneeded except to overcome original and succeeding interpretations that are reasonably well established as agreed modifications of original meaning.

Stone's case against Scalia is correct only in some cases and extremely weak in others. Let me provide one instance in which the arguments of Stone and Tribe for a living constitution that a Court can interpret contrary to original meaning would be compelling. Scalia, for instance, holds that the execution of criminals is not cruel and unusual if it was not when the Constitution was adopted, regardless of how opinions may have changed on this subject. Even if it is crystal clear that capital punishment was neither cruel nor unusual in terms of original meaning, there are reasons why original meaning may not be determinative under all circumstances. Although original meaning is normatively determinative in the usual case, applying it to the text if the cultural context has

changed radically and durably with respect to the issue at hand will threaten the contextual understandings that permit any legal system or society to operate with support.

Suppose it had been a custom in a number of states at the time the Constitution was adopted to burn people at the stake. Can Justice Scalia affirm that he would not hold this to be cruel and unusual punishment in our time if one state legalized this method? If the Court reached such a result, it would shake the system and cause the Court to be held in widespread disrepute because it would be in grievous disjunction with the way in which the implicit context of relevant concepts influences how our society understands them. Rather than reinforcing the rule-of-law, it would undermine it. No system of law can function if it employs concepts in a way that is foreign to the actual society in which they are employed. If original meaning divorces law from the implicit culture when it has changed pervasively and durably, attempting to apply it will bring the law into discredit. On the other hand, Tribe's use of relatively abstract and expansive legal reasoning – including analogy, principles, and distinctions – produces an intellectual facade that also separates law from the culture that provides established rule-of-law meaning to laws. Even when this reasoning is responsive to actual changes in the culture, it may violate the rule-of-law by illegitimately imposing a change that the culture has not yet validated. Thus, it may extend to the Court a role that is offensive to the character of the American political system.

The arguments of Tribe on one hand and of Scalia on the other show how the attempt to establish a method of interpretation that does not respond to the *complementarity* of *correlative* processes fundamentally undermines legitimate jurisprudential reasoning. Both approaches smack of an absolutistic logic that does not work even in physics. Law schools need to pay more attention to philosophy.

Interpretation and the American constitutional system

How can implicit culture be related to the jurisprudential process in a way that is consistent with the rule-of-law? The constitution provides a key to finding the right balance in the American system. This balance reinforces the contextual reasons that disallow Professor Tribe's solution of basing Court decisions expansively on a changing, as distinguished from a substantially changed, culture.

There is a balance in the American system, even if not an absolute distinction, between an executive that implements policies according to changing understandings of requirements, legislative bodies that enact

statutes that respond to the popular will, and a judiciary that keeps the legislature and executive within constitutional bounds. It is an important task of the legislature to enact statutes that determine public policy, of the executive to administer those statutes, and of the judiciary to restrain both, when their behavior is inconsistent with statutory or constitutional law. It is not a proper function of the judiciary to make public policy except where the openness of the meanings leaves no reasonable alternative.

There is firm reason in the difficulty of the amendment process, and in other constitutional provisions, including the division and separation of powers, to believe that it is not appropriate for any amendment of the Constitution, including of its original meaning or of the cultural embodiment of its generalities, to be an easy process, let alone a process in which one branch of a divided and separated government can carry out fundamental change on its own, at least in the American system. Such insufficiently supported change contradicts the spirit of the Constitution, the structure of which is designed to slow down fundamental change.

That federal judges are not elected and that their term of office is not limited emphasizes that they are expected to be resistant to the swings of electoral passion. If they allow their decisions to be based on limited swings of popular passion or belief, or on personal belief, this defeats the rule-of-law characteristics that the constitutional structure of our government is designed to provide.

When the Court acts consistently with Professor Tribe's expansive understanding, it removes an issue from legislative determination, where it belongs. If it does this, the Court undermines the legitimacy of the system by presenting protesting citizens with an almost impossible task of formally amending the Constitution in a period in which a partial shift in meaning has occurred. That is not the balance that the Founders intended. Original meaning, even if clearly known, should not prevail over durably changed meaning. And judicial recognition of change ought not to occur until the culture is durably changed, especially in the face of laws to the contrary.

The argument that the constitution is a living document, although correct when properly employed, is used by some liberal members of the Court as a license to impose their values on the Constitution. However, the American system of separated and divided government is a system that facilitates popular sovereignty while providing checks and balances that inhibit transient passions from undermining the institutional and cultural foundations that sustain a society worthy of free human beings.

There is an appropriate way to take account of the senses in which both Scalia and Tribe are partly correct concerning interpretation of general statements in the Constitution while avoiding the defects of their respective positions.

The ninth and first amendments

I agree with Scalia that the Court's inventing of new individual rights shows a lack of respect for the rule-of-law. He objects to use of the Ninth Amendment, which refers to undefined other rights that are not enumerated, because, he says, it is open-ended. On the other hand, Tribe correctly argues that the Ninth Amendment shows that the founders did not restrict original meaning to enumerated rights or even necessarily to original rights.

Even enumerated rights, which are stated in highly general form, depend for their implementation upon original and cultural meaning. Their extension cannot depend only upon analogy – and certainly not analogies of analogies – and transitory swings in public support or the personal beliefs of justices. If a new type of situation involving the possible application of the right arises, the analogy must be extremely close and supported clearly and convincingly by cultural understanding. Otherwise the Court has legislated in a way that defeats the rule-of-law.

Consider the issue of free speech. Laws against burning the flag were in effect from the founding days and were often enforced, without perceived infringement of free speech, thus manifesting original meaning. Justice Brennan's assertion that George Washington destroyed a Union Jack failed to note that this was an act of incipient rebellion and that he most likely would have disciplined any soldier who burned Washington's revolutionary flag.

The fact that overwhelming majorities in Congress and in the country support a constitutional amendment overturning Brennan's flag decision – although it is unlikely that the requisite proportion of states will ratify it – is proof positive that the ruling was not based on present cultural understandings, let alone on a durably and pervasively changed culture. That four of nine justices disagreed proved that Brennan's legal argument was less than clearly convincing, even to a Court that used jurisprudential methods that Justice Scalia appropriately, even if inconsistently in this case, questioned.

Furthermore, the belief that criminalizing the burning of the flag is such a serious breach of freedom of speech that it must be opposed makes little sense. Carrying the flag with a black band under it in fact

would make for a more effective protest. Rather than undermining the symbol that binds us in defense of our system, as when our troops raised it on Iwo Jima, such a response would be arguing implicitly that the supporters of the protested policies are the ones who are undermining our values. Although I would not wish to turn good sense into a constitutional principle, the Justices nonetheless might place more value on it than they do. Thus, burning the flag is not an unenumerated right. In fact, it is, even if not directly, a call for rebellion, which is surely not an unenumerated right.

We no longer put in jail one who denounces a sovereign. When a member of Congress called the president a liar while he was delivering a speech to Congress, no one suggested making this a crime. But, if others emulated him, there well might have been a call for some form of punishment. Such punishment in these circumstances, at least in my opinion, would be within the powers of Congress, and perhaps even desirable.

If unenumerated original rights had had the same strong basis as enumerated rights, consequent agreement on what they were would have been a strong ground for enumerating them. In any event, their foundation is weaker and must be persuasively argued on the basis of how they are embedded in the culture. If one wishes to incorporate rights for which original meaning or strong original cultural support cannot reasonably be argued, the standard should be even higher. In the absence of legislation in a significant number of states, only pervasive and sustained changes in the culture – the sorts of changes that might support a constitutional amendment – should suffice to sustain judicial recognition of new rights.

The Court, in its pursuit of abstract principle expansively understood, has gravely infringed on the right of the national or state legislatures to make prudent judgments that balance considerations relevant to the general welfare and the constitutional operation of the government. *If the Court should be correct on policy grounds, that would be constitutionally irrelevant.*

How analogy and judicial inventiveness led to Roe v. Wade

Connecticut v. Griswold, which overturned a Connecticut law that forbade the sale of contraceptives, should have been justified persuasively either as one of the original unenumerated rights or as a new right. A pervasive and sustained cultural foundation for the right to contraceptives that included a majority of Catholics supported it.

As dicta, privacy and importance may have been worth mention. But it does not follow that these general considerations were constitutionally determinative. Only a showing that the culture had established a right to contraceptives as one of many possible manifestations of individual rights in the area of sex and procreation could serve that purpose. Griswold treated the concept of privacy as if it had a meaning that could be divorced from the range of contexts in which it is employed. This sleight-of-hand was unnecessary to reach the desired conclusion and it confused subsequent discussions of constitutional law.

Once the wrong foundation for Connecticut v. Griswold was chosen, analogy could be used – at least by a Court that placed so much stress on analogy – to invent new loosely related rights based on privacy and importance. However, even so, the principles invoked in Connecticut v. Griswold were not sufficient to establish a right to abortion, for the Court had to dismiss any rights of the fetus that society had a duty to protect. A second necessary step was to *redefine* 'person' to include 'independent viability'.

Where did Roe v. Wade's definition of person – a definition that excluded any rights of the fetus that society had a duty to protect – come from? It has scant lexical justification. There is no intimate factual link as there is between hydrogen, oxygen, and water. It is not based on legislation. It is not supported by pervasive and settled opinion or by historical practice. It was the sort of argument that a clever young clerk who thought only of insulating a desired result from subsequent change might recommend to a Justice who did not think deeply about his constitutional role.

Roe v. Wade also involved a conceptual error. Personhood is a correlative, not an either/or, concept, and rights can be attributed to a developing human ranging from the minimal, say at the time of fertilization, to full, depending on the stage and condition of being human. For instance, children under eighteen are legal persons who do not have the right to vote. And seven-year-olds do not have the right to choose the kindergarten to which their parents send them. However we determine the applicability of rights, lack of independent viability did not constitute an absolute barrier to any human's rights until the Court invoked that concept in Roe v. Wade with respect to the developing human fetus.

The Court's definition was arbitrary, even incoherent. Even if one argues that the meaning of independent viability, as the Court used the concept in Roe v. Wade, was 'physical inseparability from the mother', analogical reasoning, if a strong feature of constitutional argument,

would make permissible, even easy under many circumstances, various extensions. The examples below all involve close analogies that cannot now be brought within the scope of the principles invoked by Roe v. Wade only because the cultural definitions that distinguish the cases are so strong that no court would dare to test them. If, however, the culture begins to change, then the Court, with the same sleight-of-hand that produced Roe v. Wade, could incorporate them at a stage that does not support this move.

An adult on life support, even if this is a permanent feature of life, remains a person. Brain-damaged children, who require constant support and who, unlike the fetus, are incapable even in principle of becoming self-supporting, have rights. An infant or even a young child is not independently viable. Left to its own devices it would die. So we require parents to provide support, at risk of legal punishment if they fail to do so, no matter how onerous and devastating this may be.

Will making rights an attribute of humanity correct the problem?

Making rights an attribute of humanity will not exclude any of the problems made by the Court's illicit moves in Roe v. Wade. To resort to a concept of what is human as a foundation for rights, as the Court's dicta sometimes seem to suggest, when speaking of the characteristics of the fetus at different stages of development, will not overcome the previous problem. An article in the *New York Times Magazine* of 2 November 1997, by Steven Pinker (1997), professor of psychology at MIT, has shown us how easily definitions that are not grounded in the settled opinions of society can be used to remove the protection of the law. 'The right to life', Pinker says, 'must come ... from significant traits that we humans happen to possess ... such as an ability to reflect upon ourselves as a continuous locus of consciousness ... and that connect us to other people. ... Our immature neonates don't possess these traits any more than mice do. ... To a biologist birth is as arbitrary a milestone as any other.' Thus, Pinker opines, it is reasonable to hold that we have a right to kill the newly born, even if he does not advocate this. His thesis is no more unsound jurisprudentially than that of the Roe v. Wade Court.

Very few now remember the 1930s, when the Silver Shirts, the Coughlinites, and the Ku Klux Klan were riding high domestically while fascism was rampant in Europe. A Court in that period which employed the jurisprudential methods of the Roe v. Wade Court, *and which paid attention to the judgments of external nations*, could have undermined the liberties, poorly implemented at times, that made the United

States despite its unenlightened policies, at least comparatively, a great nation.

Suppose the values of the Taliban, including the honor killing of daughters who marry a male who is unacceptable to the father, were accepted by a majority of nations. Perhaps a court that accepts Geoffrey Stone's thesis could hold that a father who kills his daughter on these grounds is no more guilty of murder than is a killing in self defense. A Court that resists such methods and that places emphasis on original and traditional American values would resist such temptations.

It is inappropriate for the judiciary to make a practice of taking into account the decisions of foreign courts. This would have led to despicable results in the 1930s. It is not the appropriate function of the Court to accelerate externally-induced change. Those justices who try to make the case for such external inputs do not understand the American rule-of-law system.

One of the Court's most important functions is to place a rule-of-law barrier in the path of popularly induced change. The doctrine of originalism, despite its genuine problems, is a very important component of the rule-of-law.

The justices who advocate taking into account decisions in external jurisdictions on the basis of a living constitution are forsaking their proper role in the American system. In the American system of law it is the legislature that takes such factors into account and the Court that keeps the legislature within bounds based on original and other established rights. Although there is a sense in which the courts cannot avoid making law because of the less than perfect fit between general norms and real world cases, the appropriate role of the courts is to minimize their law-making.

Once legal reasoning is detached from its implicit and explicit cultural base and becomes abstract and expansive, it is child's play to toy with definitions until any desired category of individuals is deprived of legal rights. Only reasoning that rests squarely on settled cultural standards can hope to slow this descent into abhorrent social engineering. That an otherwise respectable newspaper would publish the Pinker piece as other than Swiftian satire shows how far the Brennan-influenced Court's jurisprudential standards carried the intellectual class, although not the entire society, in one short generation.

One proper function of the Court is to slow down changes in the cultural redefinition of rights until the matter has very broad support, not to lead the way. There is no absolute protection for our liberties, but a Court that follows the path of the rule-of-law offers the best protection.

Geoffrey Stone's argument that original meaning cannot be determined in many cases does not absolve the Court from determining that some findings are outside the boundaries of original meaning, that the Court is usurping the role of legislators by making law – not interstitially in the absence of a perfect fit between case and norm – but by exceeding what is required to reach a decision. When a criminal court acquits, it does not find innocence. It is unable to find guilt. The Court should not reject a norm that has substantial support in terms of original meaning even if it is not ready to hold that a particular attempt to relate original meaning to a variety of particulars has succeeded.

If a Court bases a decision on original meaning, it has an obligation to show that its decision is close enough to a reasonable interpretation of original meaning to justify the result in *this case*. That this may not be possible in some cases does not mean that it is not a valid criterion in other cases.

Stone's argument that no court has the right to rule against one's choice of a marriage partner is severely problematic. There are no rights except within systems of law or of culture. And the same framework that can extend a right can also restrict it. If one wishes to challenge a particular claim, this needs to be done from within an appropriate legal or moral framework. The defects of Stone's abstract philosophy are easy to see in other cases. For instance, it has been argued that a ruling that a mother must view an image of a developing baby before choosing an abortion is an invasion of her right to an abortion. Would one argue that making an owner view the impact of working conditions on workers is an invasion of the owner's right to run his business?

I do not doubt that some libertarians would accept the former argument. What they would ignore is that moral issues are evaluated by taking conditions and consequences into account. The extent to which a developing baby is recognizably on the route to humanity may not be decisive with respect to a decision on abortion but it surely is relevant to how a decision on abortion should be made. Those who favor abortion rights recognize this when they point to the suffering of those women who are denied abortion. What cannot be conceded to them is the right to take consequences into account in one case and not in the other. The simple answers sought by those who like Stone would reduce law to logic are not adequate. Every choice invokes costs.

How the court should have decided abortion issues

There was a proper jurisprudential form of reasoning that could have weakened the constitutional foundation of antiabortion legislation in

the social conditions of the sixties without radicalizing the American conception of human rights. If a state had passed a law forbidding abortions even in cases of rape, and if this law had come before the Court, it would have been defensible to argue that settled changes in popular opinion and laws going back to our early history did not permit this legislative subordination of the rights of the mother to the rights of the fetus at some stages of its development in the circumstances of rape.

Today a Court could hold persuasively that some restrictions on abortions in cases of rape, incest, and threat to the health of the mother are unconstitutional. Roe v. Wade, however, was, and still remains, way over the line.[4]

Some additional consequences of the court's inventiveness

Much of the discussion of Roe v. Wade so far has involved analogies, which is exactly one of Justice Scalia's points. The reader may consider these analogies fanciful, much as a reader in 1950 might have considered advocacy of the standards of Roe v. Wade fanciful. However, consider how far Roe v. Wade has already pushed us. If the Court's radical practice in dismissing all rights of the fetus becomes the model, then only foreseeable public outrage, not jurisprudential reasoning, could prevent other equally arbitrary inventions. If a fetus has no rights, why should not a mother be allowed to injure, even mutilate, it? The fact that the eventual child will have rights is irrelevant. The fetus has no claim to legal protection from the mother, although the mother as the owner of the fetus has rights against others who might damage it.

However, if the fetus has rights, and if therefore society can protect those rights, then even if it is held that its right to the mother's womb must be subordinated at some stages of development to her right not to carry it to term in the case of rape, for instance, she may not injure it contrary to law. The ground that permits the act that brings death to the fetus would not invalidate social protection of the fetus prior to an abortion.[5]

From a policy point of view, legislative determinations that made abortions easy in order to avoid the many backdoor abortions that were occurring were defensible. What I found deeply unsettling morally, as well as constitutionally unsound, was a decision that made the destruction of an unborn child of no more social and political concern than the removal of a wart. Yet if abortions were done because the fetus had the wrong sex or the wrong eye color, or because the child was of mixed race, Roe v. Wade in effect held that society and its instrumentality, the state, have no right at all to intervene.

If Roe v. Wade is governing, the Court has no logical grounds – although its political sense may deter it – from holding that body parts may be sold to the highest bidder and that laws to the contrary are unconstitutional. This fits the Roe v. Wade rationale better than does abortion rights. Body parts, whether of the self or of a dying relative, are private 'possessions', the sale of which may be extremely important to those in financial need. Such a sale would not even arguably negate any other human's rights. Yet legislative restrictions on such sales are clearly appropriate in our society.

The argument for Roe v. Wade is sometimes expressed in terms of reproductive rights. Recently (2009) a single mother with six children gave birth to octuplets from implanted fertilized eggs. She said what she wanted in life was lots of children. But she will not be able to provide for them or to give them a good chance in life. Do her reproductive rights really trump reasonable social standards with respect to the implantation of fertilized eggs? Or can legislation penalize this?

The philosophical error inherent in Roe v. Wade

Geoffrey Stone's more recent treatment of the rights of individuals, which is consistent with Roe v. Wade, inherently recapitulates the position of Hans Kelsen (1967[1960]), who tried to reduce law to logic. Morris Cohen (1931) demolished that position. Rights do not exist as premises 'which no court can deny'. Rights exist only within the framework of law or morals. And they differ with circumstances. For instance, we have the right to kill our pets but not to torture them.

Should all examples of excessive judicial lawmaking be revoked?

Roe v. Wade is an example of atrocious legal reasoning. Revoking it would be politically unsettling. But revoking it and following it are not exclusive alternatives. Justice Stevens' position that Weber was bad law but should be followed on the basis of *stare decisis* was wrong. Taken seriously, it would have undercut the Brown v. Board of Education decision. A more complex analysis which does not attempt to reduce law to logic is required.

Educational tracking by intelligence is not forbidden by the Constitution, and it was widely believed at one time that blacks were mentally inferior. Yet clear evidence would have shown that many blacks – for example, Frederick Douglass, a self-educated former slave who became a U.S. ambassador, and George Washington Carver, a

former slave who became a great agricultural innovator – were far, far more intelligent than most whites. There was no rational educational ground to support educational tracking by race. Thus, such tracking is a denial of individual rights.

Plessy v. Ferguson was a prime example of a decision that elevated the social preferences of the Court into constitutional law. The dictum that blacks and whites had an equal right to travel on trains with their preferred fellow passengers in black and white sections transformed the *original* meaning of the fourteenth amendment into an inequality that rested on a deference to prejudice. There is always some equality that can be used to support an equal rights case.

Plessy implicitly used a method of analysis followers of the living constitution doctrine applaud. A resort to original meaning would have invalidated that misbegotten decision. Originalism, therefore, is not outmoded despite Professor Geoffrey Stone's arguments to the contrary. It has relevance in its complementary relationship to the doctrine of a living constitution. It is limited in its application by the occasional insurmountable difficulties of discovering what original meaning was.

We know that the original meaning of the Fourteenth Amendment forbade legal discriminations based on race. In other cases, we may not be as sure of original meaning but we may be able to find more or less reasonable accounts of original meaning. This is a method which is hardly unknown to lawyers and to judges when they interpret the (original) meanings of contracts. If one were to apply the living constitution method to contracts, one would not search for the intentions of the parties when they made the contract. One would search for the contract they would reach if they made the contract now.

Weber should have been reversed because it was badly reasoned, it was recent, it remained controversial, and *it was not intimately tied into wider areas of the law*. Even if the due process clause of the Fourteenth Amendment was improperly applied to the states, as some legal scholars argue, the due process clause is widely and pervasively accepted and it is intimately tied into a wide body of contemporary law. It is a legitimate feature of the contemporary American constitution. But its interpretation cannot be made to rest on a definition or a simple premise.

States rights and same sex marriage

States have the right to establish reasonable standards for a variety of functions. For instance, they can establish standards for a medical license. They can require that doctors from other states who do not meet their standards acquire these credentials. However, same sex partners

who are married in a state that permits such marriages cannot meet the standard for marriage in a state that requires that a marriage be between a male and a female.

Current evidence suggests that same sex partners can carry out the socially desirable functions of marriage including child rearing. There is apparently no good reason to believe that same sex partners will prejudice the sexual preferences of children.

It, thus, can be argued that the failure of a state to give full faith and credit to a marriage that was made in a state that permits same sex marriage is a denial of the equal rights of such same sex partners who moved to a state that forbids same sex marriages. It denies them the right to engage in the socially desirable activities connected to marriage that are important to the eufunctioning of a society. I agree with this argument.

But I would be cautious about generalizing the former position. For instance, a state properly may establish a standard for corrected vision for a driver's license that a driver from another state cannot meet. This is one of the reasons why Morris Cohen argued that judges cannot avoid making law in the interstices of legal norms. The problem with Roe is that it attempts to reduce the issue of abortion to a logical system. Such a system rides roughshod over differences among the states that rest on significant differences in moral understandings. The jurisprudence of Geoffrey Stone suffers from a similar problem.

Court decisions and the political process

Brown created a backlash. I think this backlash in part was produced by the way in which Brown was implemented. I think the Court, which is the last resort on issues of constitutionality, has a duty to formulate its decisions in a way that takes significant differences among the states into account even if it does not surrender to them. If the Court had held that Brown should be implemented by states unless their circumstances do not permit this, I believe that much of the backlash could have been minimized.

For instance, if a court had held in an early case that kindergarten, the first three grades, and college courses had to be integrated immediately, it could have reserved to the judicial process decisions over whether progress in other grades in individual states was satisfactory. I believe, although speculatively, that the process of integration would have proceeded at a better rate than it actually did if that approach had been adopted.

Something similar might be useful with respect to a decision on the Defense of the Family Act. That law is in strong conflict with majority views in a number of states. It assumes a position on how individuals are attracted to engage in families that does not accord with science. But this is not commonly understood.

Therefore, the Court should take pains to avoid the abstract logic toward which Geoffrey Stone, for instance, is attempting to push it. Law, as Morris Cohen emphasized, is not a system of logic. The Court in some respects is like a midwife. It needs not only to deliver the infant but to make sure that the delivery assists its development.

Campaign funding

Although I find little logic in Justice Stevens' dissent in the 2010 decision on campaign finance, Justice Scalia's majority opinion brushes aside the legislature's role in regulating the impact of money on the legislative process. The impact of money marginalizes the power of other voices. It, thus, undermines one of the strongest principles that the American system is now designed to protect. One can distinguish such laws from other laws because the legislature has a duty to protect the fundamental principles and the continuing operations of the American system. This overrides the need to find specific reference in the Constitution.

Justice Scalia is generally viewed as a conservative. However, one of the virtues of conservatism is that it takes the quiddities of the world into account as opposed to an abstract liberalism that reduces the world to principles such as those of Professor Stone. Justice Scalia's opinion did not reflect that conservative principle.

I agree that corporations have a right to lobby the government because government policy affects their fortunes. This is good for the country because the success of business is vital to the interests of the nation. However, a world in which the impact of money, and the raising of money, occupies almost all the time of legislators cuts off the flow of information from other affected parties, even in the age of the internet. Even worse, the use of corporate money to sponsor social gatherings in which legislators and justices participate leads to the type of group thinking that obscures dangers and desirable alternatives. Justice Scalia, who seems to believe that his evident intelligence and genuine moral integrity protect him from group thinking sounds more like a Justice Brennan than like a Justice Frankfurter in his reasoning in this case.

The process of group thinking is insidious. Howard Raiffa invented a stochastic game in which the participants say yes or no to a question.

The participants by prescription were as likely to say yes as to say no. If they agreed when two met, they were slightly more likely to give the same response the next time and slightly more likely to meet with someone who agreed with them. Over time two groups emerged. In one all the members said yes. In the other all the members said no. So much for our actual intellectual independence. We cannot escape the social processes from within which our opinions develop.

In one of his many arguments with me, Milton Friedman stressed the importance of local legislatures because they are closer to the people than is Congress. Recent studies have shown that state legislative bodies tend to be captured by extremists either of the left or the right. Congress, despite its profound faults, is less dangerous than state legislative bodies.

The general welfare clause

Justice Scalia was incensed by the application of the interstate commerce clause to a case (Wickard) in which a farmer who was raising wheat only for his own use was subjected to a law affecting the growing of wheat. I am not familiar with the details. If the extension of the law to this case was required for an important public purpose that fell within the general welfare powers of Congress, I might agree with the result. The argument that growing wheat affects interstate commerce is irrelevant. Wickard's growing of wheat did not affect interstate commerce. The law could have been written in a way such that its applications did not include cases that were not even remotely related to interstate commerce. For instance, it could have excluded all farms that produced or sold less than such and such an amount of wheat.

On the health issue I would have supported the mandate only if it were the only practicable means of making health care available to all. The general welfare argument would then support this otherwise unconstitutional provision. However, if the creation of a high-risk pool funded by taxation could accomplish this objective, I think the extension of the power to tax to the mandate violated the Constitution. I therefore disagree with the decision in this case. The legislature had an obligation to write the law in a way that was compatible with the constitution. Roberts made an understandable decision to support the general welfare in a situation in which it could be assumed that the Congress would not act responsibly. But it was bad law.

Law is not logic. And it is not morality. Thus, it is licit for the Court to take changed circumstances into account when the legislature acts on

an issue that lies within its powers. However, it must be careful to do this in a way that does the least harm to the rule-of-law.

Law and justice

President Obama has stated that he wants to appoint Supreme Court Justices who understand the needs of the underprivileged. Except within the framework of a position that judges need to understand the world in which laws are to be applied, I find that position at odds with a correct view of the function of the Court with respect to laws adopted by the legislature. A Justice of the Court has a function quite different from that of a justice of the peace in a municipal court. In the American system, justice and corrections of injustice are problems for the legislature and the holders of executive office to solve.

However, there are at least two important qualifications. If contrary legal analyses have comparable support in the law, a judge legitimately may allow his moral principles to decide the issue. And there may be issues so important that morality overrides law. Such cases need to be carefully circumscribed. Even if the Justices had thought that circumstances at the time of Roe v. Wade justified an exception, the way in which they decided the case, in my view, was indefensible for the reasons cited in this chapter.

The exception created by the Nazi threat, in my opinion, justified the imperial use of the presidency by Franklin Roosevelt. Three neutrality laws were passed between 1935 and 1939. Roosevelt signed them because a large majority of the public wanted them. And he promised in his 1940 campaign to work for peace even though he wanted to find a way to get us into the war. Roosevelt used the navy secretly to escort merchant ships to England. When this proved insufficient, he ordered the navy secretly to sink German submarines, acts of war, particularly in the absence of a direct threat. He created a situation in the Pacific that would have forced Japan to fail in what it regarded as its rightful role in dislodging the Europeans from East Asia. (I note that the Emperor insisted on a declaration of war because international law then required it.) If these events had come to public knowledge, Roosevelt likely would have been impeached and perhaps even convicted. But he knew that a Nazi victory would have been catastrophic for American democracy and for the future of humanity.

Knowing when and how to act in this exceptional situation made Roosevelt a great president. I treasure my vote for him in 1944. I wept when I heard on Saipan a radio report of his death. Nonetheless, I

thought the Japanese had good cause to attack Pearl Harbor. I did not regard it as 'a day of infamy'.

World views are relevant to analysis. The world of 2013 is so different from the world of 1795 that the designations of circumstances and the meanings of words may be radically different. The advocates of a living Constitution tend to use this argument to justify novel legal norms. My position is that this truth must be employed conservatively by the Court. The Court needs to be able to show not merely that this new position fits radically and durably changed circumstances but also that it does not transform a democratic system into rule by judges.

11
The Market and Liberal Democracy

Milton Friedman's implicit preferred model of the political system, like that of Hayek, mirrors his model of the economy. It is a perfect system in which innumerable participants who possess information and intelligence interact to produce results. No actual political system has ever matched this model or worked in this way. If the least regulation or imperfection puts us on the road to serfdom, we are doomed.

Friedman's approach, like that of Hayek, mistakes a model of a system for a real world in which different boundary conditions affect different types of systems differently. Therefore, such general theories, even with respect to the economy, let alone with respect to politics, impede analysis. If we wish to examine the role of regulation, we need to do so with respect to the system in which we are embedded and the problems it imposes.

Decentralized decision-making and planning are *complementary* processes. Failures of analysis occur when either position is made absolute. Even more importantly, the functioning of markets varies with type of market system.

In an age in which the superiority of the market over planned economies and in which the relationship of a decentralized economic system to political democracy are generally accepted, it still would be a mistake to place market decisions on too high a pedestal. Friedrich Hayek is correct in arguing against a system of just prices. The market is an indispensible, even though faulty, method for allocating resources. On the other hand, the argument that labor alone should receive the increases resulting from increases in production ignores the extent to which other factors of production contribute to these results.

Hayek carries a good case too far. I disagree not only with his overemphasis on the market, that is, on what he calls the extended order,

but with the evolutionary case he makes in *The Fatal Conceit: The Errors of Socialism* (Hayek 1989). I do not agree that the distinction between 'mine' and 'thine' is entirely an externally imposed constraint that is foreign to animals. My dog may beg from my plate, but he will not take from it. However, if I take something from his plate, he jumps at me and takes it back. The well-known phenomenon of territoriality is one aspect of animal recognition of the difference between mine and thine. And so is the protection of her cubs by a lioness.

The forms within which self-centered and other-centered activities occur are learned – and they evolve over time – but the distinction has been built into our nature by evolution. Although the infant has no clear recognition of self and others, it is as predispositionaly disposed to learn these distinctions during maturation as it is to learn how to walk. Furthermore, every successful culture must satisfy the need for both the *gemeinschaft* and *gesellschaft* aspects of human nature.

Hayek is so impressed by the productive power of the market that he believes conceptions of justice are destructive. But we would not want laws that increased, for example, the criminal conviction of innocent people, tax evasion, or starvation among the poor. A society so radically destructive would lose its legitimacy. If one points to private philanthropy as an answer, its consequences can be either desirable or destructive depending on circumstances. The gap between high-level generalizations and particular implementations is enormous.

Although an effort generally to pay people according to nonmarket evaluations of their worth would undermine productivity, it does not follow that no considerations of justice or aesthetics should ever be made. Italy's subsidization of the opera is defensible, although I think public radio is as ridden by ideologues as are the commercial airwaves. Private and public donations to universities may produce an amount of human capital that improves society as well as individual lives when other mechanisms to produce similar results at an early stage of life are significantly absent.

These are complex issues that cannot be reduced to maxims. Raising the minimum wage may improve the lives and health of some minimum wage workers. But it may reduce the availability of jobs.

There is nothing sacred about the tax code. But it is not a neutral instrument. It is difficult to understand some aspects of the tax code apart from the influence of rich people on Congress. Retained interest – the payment received by successful investors of capital – is much more like a bonus for sales than like a capital gain. It is outrageous to tax it at the capital gains rate. On the other hand, dividends come from profit

and have already been taxed. I think this tax depresses investments and jobs. But these opinions are not necessarily correct.

The market has substantial limitations. It does not really maximize goods because its rewards are constrained by the mechanisms of choice. An individual who would otherwise play his high-fidelity equipment loudly late at night in an isolated house still may support an ordinance that forbids anyone from doing this within a community. More importantly, by the standards of the market, a successful purveyor of junk foods who makes billions is worth incomparably more to society than a doctor who conquers a dreadful disease.

Moreover, at least some of the income of financial tycoons is subsidized by the public. Firms that are too big to fail can borrow at lower cost than other firms. This brings them income that does not entirely depend on productive skill. Their ability to subsidize election efforts brings them influence on legislation that improves their positions.

The belief that the market is a neutral tool is a myth. I believe that the market on average is the best instrument we have for the allocation of capital. But I also believe that taxes and social policy are important in compensating for the imperfections of the market.

Even more importantly, the libertarian doctrine that Rand Paul espouses is destructive of community and of the common good. The money managers who led us into the crisis of 2008 are a product of this community-destructive process, which Hayek raises to high principle. It is destructive of the human nature that, through successful evolution, produced individuals who subordinated individual preference to community needs – not universally but in an appropriate mix. Religion, when disconnected from orthodox insistence on specific rituals, is glue that protects us from the socially destructive individualism of a Hayekian world.

My good friend Milton Friedman was brilliant and was often proved right when others opposed his insights. But brilliance is compatible with occasional absurdity. Milton's argument that licensing doctors produces a monopoly and raises prices was correct. But his argument for allowing anyone to hang up a shingle was fatally flawed. Although licensing still permits incompetent doctors to flourish, Milton's thesis that common information would permit people to choose between good and bad doctors radically fails to reflect the extent to which smooth-talking and dangerous charlatans would do grave damage to patients.

One reason I use the University of Chicago medical system is that it evaluates the skills of doctors in a way that I could not independently match. I trust Consumers Union with respect to the evaluation of

many goods. But when I was independently involved in the evaluation of high-fidelity equipment, I found their recommendations to be defective. And their economic advice was occasionally absurd as when it once argued that a company should be avoided if it produced too much profit even if it sold goods more cheaply than its competitors.

The market system at times corrupts many of our institutional processes. When new modes of making steel after World War II were leading to the obsolescence of our steel industry, its leaders had an interest in not buying new equipment during the years in which their salaries and bonuses normally would be highest. When I pointed this out to George Stigler, he asked me whether this would not have been reflected in the share price. My response was 'not in the short or intermediate term'. And in the case of steel, it is clear that the errors of management with respect to the future of the industry were not reflected in short-term, or even intermediate-term prices.

I differ with Hayek on the subject of planning. If by planning he means rationality of the type sponsored by some early modern French philosophers – which attempt to plan an entire society on the basis of a few definitions and axioms – then, of course, it will fail. It sometimes fails also on a small scale. I remember the planned city of Brasilia as unlivable, a monument to the self-love of architects.

In any event, a business is likely to fail if it lacks a good business plan. Defense is likely to fail in the absence of a good military plan. Although the danger may have been exaggerated, society needs a plan to prevent ecological disaster. The report of April 10, 1991 of the National Academy of Sciences on global warming is germane. Furthermore, European planning of urban growth and mass transit has produced cleaner, more livable, and more accessible cities than in the United States.

It is not clear to me that a limited degree of national economic planning is inadvisable. I am not sufficiently familiar with the 5-year infrastructural plans in which China engages to evaluate them. However, it is possible that such planning, and its implementation, would be at least marginally useful in restarting production and in increasing employment. We know that the infrastructural advances of the nineteenth century played an important role in America's becoming a superpower.

The infrastructural advances of the nineteenth century were financed by debt. They were extremely cost effective. Current infrastructural advances could be financed by debt and by taxes related to use. The American infrastructure is very old. It is inefficient and on the verge of collapse in many areas. If effects even partly similar to those of the nineteenth century could be produced by an American five-year plan, this

might be desirable even if the national debt is temporarily increased. If it is well designed, it might produce increases in employment and in government income from taxation. It also might reduce the costs of a number of governmental services.

The efforts to improve education almost invariably ignore designs for education that would use developments in science that would stimulate students to use their imaginations with respect to academics. For instance, education, at least in part, might produce learning systems somewhat similar to those in which students learn to play games. Such a system might not need brilliant teachers but only intelligent and supportive teachers.

Desirable limits on freedom of choice

In the 1990s New York passed a law outlawing the use of midgets as bowling balls. The very clever and very funny late columnist, Mike Royko, took the position that if midgets, who, like the rest of us, had to eat, liked earning $2,000 a week by impersonating bowling balls, they should have the right to do so. This is not an unreasonable argument. If we could know that this would occur only in a few cases in remote areas, I perhaps would agree. But widespread activity of this type would run the risk of desensitizing us to the rights of all humans, including deformed and crippled humans.

There is no doctrinaire solution to this problem. Some might try to outlaw ethnic jokes or irreverent remarks. Both the absence of limits and an abundance of limits can be dangerous to liberal democracy and human autonomy. There is no neutral framework and no substitute for good sense. My own preference would be to err on the side of liberality. But I would not raise this to high principle.

Anthony de Jasay (1987) suggests that we have to choose between the socialist principle that society distributes goods on the one hand and the market or contractual mode of distribution on the other. That is too general. We can choose between the areas in which we want the market to operate and the areas in which we want some other principle to predominate or at least to curb market determinations. Food stamps or the distribution of surplus goods to the poor are often defensible choices.

We do not have to choose between a level playing field for individuals and that which the market produces, as de Jasay states, because society can decide to restructure the field when imbalances produced by the market begin to offend our sense of what is just, of what is politically feasible, or of what is socially or morally desirable.

In any event, the actual playing field is highly imperfect and never entirely neutral. The present system in which the top one percent of the population controls perhaps seventy percent of its assets and more than seventeen percent of its income is not a product of a free market but of the way in which our particular free market operates within the framework of our laws. No sustained argument has established that incentives to produce would be crippled, or even reduced, if the present system is modified carefully.

I support the so-called 'death' tax and military conscription. I believe that an inheritance system that permits the perpetuation, without additional achievement, of princely families beyond several generations is bad for society. For reasons similar to those which lead us to forbid the sale of body parts to the highest bidder, I think that we all should be subject to conscription for defense of our nation even if we allow enlistment to play an important role in the formation of our military forces. The strength of a society is enhanced by the expectation that we are all equally members of it, not that all of us equally prosper in it or sacrifice for it. The sense of commitment which is essential to correcting the obvious moral faults of the current American system can be fractured by massive imbalances.

There is an ultimate sense in which our connection to some others is essential both to our humanity and to our sense of community. The overemphasis on competitive edge which is producing monumental inequalities will undermine our willingness to share burdens in building a society in which we assist each other in achieving good and productive lives.

The current system of taxation has distinct flaws. It fails to raise funds that are needed to meet social needs. The limitations on inheritance taxes at the *very high* upper range threatens to create a permanent aristocratic class that is not part of (what can therefore no longer be called) a commonwealth. The legislation on gift taxes is so structured that it permits transfers that transform what once was one country into a country sharply divided between the rich, the rest of us, and the non-self sustaining.

I do not believe in equality of results. I think that the desire to ease the path for our children is both natural and desirable. I believe that competition for wealth and fame are important aspects of economic, political, social, and intellectual progress. I would not want to live in a society that stifled these types of competition. The kibbutz system in Israel, for instance, was socially destructive. But the Ayn Rand doctrine is morally, as well as practically, bankrupt. It distorts the personalities

of those who adopt it and makes them less than the good humans that they otherwise could be.

Unlike Rawls, I do not object to the benefits that stem from luck, whether it is a matter of genes or land of birth. It is part of our human heritage, part of our concrete reality. And it is up to us whether we make good use of it. On the other hand, I am collecting rent from those who came before me and from Dame Fortune. I do not have to choose between keeping all the benefits provided by good fortune or giving up all of them. Decency requires that I recognize a moral obligation to others, including those who follow. If I am unwilling voluntarily to respond to this obligation, and if too many others join me in this refusal, then others have the moral right, even the moral duty, legislatively to compel me.

Libertarians who raise individual choice to high principle ignore how this eases into self-accommodation. They rest their doctrine on an abstract analysis of societies and of agency that ignores how actual social systems and actual agents think and act as they make decisions within the framework of a given system. The libertarians are as doctrinaire as the socialists they disparage.

Thus, although I am fearful of invocations of concepts of social redistribution and aware of many of their deadly results, I fail to see that all redistributions are undesirable. A purely contractual society, whatever its other defects, would so deprive us of the deep need for membership in collectivities that it would be as self-destructive as a socialist society. Moreover, the discontent the acute perception of injustice would foster would provide ambit for demagogues.

The libertarian doctrine is based upon a practically infeasible and ethically insupportable theory of a social system. When imposed on social policy it does damage to our individual lives and our collective existence. I am deeply troubled by a society in which one percent of the population owns more of its assets than fifty percent of the population. But I am also troubled by the fact that powerful unions can depress the availability of goods for the rest of us through their collusive bargaining.

The present crisis with respect to public pensions is the product of the political power of unions that 'steal' from the rest of the population. I recognize that unions do have some important socially useful purposes. But so do democratic governments that waste our resources and that transfer assets from socially productive to other uses. And I suspect that when a government chooses which business is to be aided, it will squander our common resources.

Taste

Taste, even though extremely difficult to define, is important in our social and political lives. Mitt Romney's bad taste was compounded by what he said about the 47 percent who do not pay income taxes. I am sure there are some free loaders among the 47 percent as there are in most occupations. But the mayor of Chicago held a job fair today (November 9, 2012). Thousands arrived hours before the interviews were to begin, and they stood in line for over eight hours in the hopes of just getting an interview. Like their employed countrymen they wanted an opportunity to earn money even if some of the jobs would not pay enough to subject them to an income tax. But some of Mr Romney's fifty-three percent use their monied influence to rewrite the tax code to their advantage, for instance, retained interest, which much more closely resembles normal income than it does capital gains.

The weaknesses of democracy

The strength of democracy lies in giving voice to the disadvantaged. Democracy has its weaknesses. It is slow to respond to crises. Often it requires violence before great injustices are responded to. The racial question in the United States was an example of this. Policies are often determined by veto groups at great expense for the polity. Fortunately for the defense of democracy, Leninist regimes are not good at this either.

Not only did Gorbachev experience severe difficulty in imposing perestroika in the Soviet economy, but it took a severe crisis – the threat that the Soviet Union's economy would degenerate to a Third World level – belatedly to produce Gorbachev's early reforms. And his efforts hit a dead end before the unsuccessful coup by Soviet conservatives. Our failure adequately to deal with the defects in our market system are grounds for despair.

Democracy appears to be a cultural failure in the United States. It does not take extensive inquiry into television, the movies, newspapers, or novels to document this conclusion. On the other hand, we may be in a developmental trough. American food, for instance, became homogenized in the postwar era as a consequence of economic efficiencies. However, we are now seeing a rise of specialty stores as the efficiencies that made food and other products cheap produced the wealth that creates demand for better products. One may hope that a similar process will occur with respect to the other features of life where higher standards are required for democratic systems to work well.

Liberal democracy

Liberal democracy, in the older and more legitimate sense of liberal, implies a form of majority rule constrained by the values essential to a good society. The earlier English and Scottish philosophers were inclined to think of freedom negatively, that is, as absence of external constraint. This had some justification, for Rousseau's concept of forcing people to be free raised the specter of authoritarian government.

Yet the distinction between positive and negative freedoms depends entirely on frame of reference. We are not free to float as butterflies because we do not possess wings. If we are born without legs, or if they are bound, we are not free to walk. If we are abandoned at birth to the care of animals, we are not free to talk or even to think in ways that require certain kinds of concepts. And every facilitation that permits certain kinds of freedoms inhibits others. The marvelous structure that permits a bird to fly prevents it from moving the huge loads that a pachyderm can move.

Negative and positive concepts of freedom are bound together in a complementary symbiosis. It is dangerous to apply either concept of freedom generally rather than in historical and comparative context. One is not free to make rational decisions if under the influence of drugs. One is not free to be a concert violinist except under conditions of strenuous study and practice. One is not free to behave morally unless there are internalized constraints on the pursuit of individual wants. One is not free to live at peace unless the police constrain criminals.

Both positive and negative concepts of freedom are dangerous when addressed without awareness of their complementarity. Freedom can be used to destroy freedom even when external constraints are not imposed on individuals. One of the possible dangers in the legalization of hard drugs is that the legitimation of drug taking may erode the cultural constraints that limit it. The distinction between those things that injure others and those that do not is dangerously misleading when taken abstractly, for it fails to recognize the consequences of social legitimation and example.

The abstract rejoinder that we should be independent enough to make our own decisions – apart from its failure to understand that impressionable children are members of society – responds to a real problem with an ideal type that few, if any, individuals match. It ignores the process of socialization and of how the concept of the self is formed. And it substitutes for the complex self – a self that is not a simple or fixed process, let alone a thing – a doctrinaire and abstract concept of the self.

Every proper concept of freedom develops in a historical matrix that limits its application through cultural standards that constrain what is meant by freedom and also what is meant by 'human'. Surely a future in which we would be linked voluntarily to pleasure machines that constantly entertain us, stimulate our pleasure centers, feed us, and provide for reproduction would not now be regarded as human. The freedom I want is the freedom to be a human with a mind that is capable of assessing my choices, including what I am and what I become.

It is the rapid extension of the concept of freedom that threatens freedom by threatening the matrix within which it has appropriate meaning. And it could be the 'slippery slope' extension of the concept that could take us to the point of cultural 'no return'.

The ends of society and polity

Every political system, and every society, ought to be evaluated according to the types of human beings who are developed within it and sustained by it. Slaves and members of a permanent underclass are turned into inferior human beings. The types of polities and societies that increase their incidence are unjustifiable if alternatives exist. Greek and Roman society at least encouraged the education and manumission of slaves, whereas the American underclass seems to be self-reinforcing. Perhaps smallness of human spirit, the pursuit of transient pleasures to the neglect of enduring character, bureaucratic self-protectiveness, dishonesty, and neglect of wider human interests are inevitable by-products of any social organization, but their incidence in contemporary American society and politics is frightening.

The degrees of intelligence, moral understanding, and human sensitivity fostered are among the most important factors in judging a society. The functional illiteracy of the American population is frightening. The fact that one in six Americans believes that President Obama is a Muslim (May 2012) raises a fundamental issue about the viability of American democracy. But that is only the tip of the iceberg. I watched the first presidential debate (October 3, 2012) last night. I doubt that even experts can evaluate the arguments that were made. I did not command any of the subjects and had only a very limited understanding of several.

Other deficits are legion. Economic productivity, although essential, is only a means to appropriate ends. The degrees of selfishness, dishonesty, and addiction to drugs and transient pleasures in American society today stand strongly against the United States as a long-term exemplar, despite its clear advantages over contemporary alternative types of government

and society. It cannot be true that with the resources available to us we are unable to do better than this.

The belief that history has ended – fortunately now repudiated by its principal contemporary proponent – and that the superiority of our present system is self-evident, is dangerously wrong. Even apart from the problems that technology will present to us, satisfaction with American society and politics is uncalled for, however much we may recognize the demonstrated inferiority of totalitarian, authoritarian, and centrally planned alternatives.

The future and democracy

The current democratic systems and their social, cultural, and technological environments are the matrix out of which future political systems will arise. Their unfolding surely will create tragedies for some individuals and groups – tragedies that cannot be justified from their frames of reference – and perhaps tragedies for all if we fail to apprehend and respond to some of the unfortunate, or perhaps even evil, potentialities that are present in the contemporary matrix.

It is not difficult to project a desperate future if some tendencies in contemporary society continue to grow. The functional illiteracy of vast numbers of Americans and their inability to perform at the simplest levels of skills is frightening. The declining number of Americans with skills in mathematics, the sciences, and engineering raises serious questions with respect to the continued health of the American economic system. The growth of crime and dishonesty at all levels of American society is extremely troubling.

Libertarian doctrines stress individual choice at the expense of those agreed-upon commonalities that make us members of a community. They so excessively intellectualize and individualize the issue of choice that they undervalue those predispositions that are central to a healthy society within which we come to each other's support even when this is costly.

Let us examine a few of the technological developments likely to emerge in this century and briefly examine how they can affect the prospects of our value system and also of democratic government. Manufacturing will be largely automated and robotic. There will be few workers in factories, and these will be highly skilled technicians, professional people, and managers. The molecular basis of materials will be understood, and materials will be produced to order. Power – solar or perhaps fusion – will provide cheap energy. The genome will be fully

mapped, and microsurgery will permit the elimination of unwanted characteristics and the substitution of preferable genes. Chemical enhancement of learning will be achieved. (It is important to understand that this will have only marginal value in the absence of sustaining cultural and social standards.) The chemical and electronic control of behavior will become possible.

Since the former words were first written, we have learned how to apply enhancements to insects such that we can make them fly and direct them to a location. We have also learned how to use them to make changes in the world. Could such enhancements be applied to the fertilized egg in the womb? Or to babies?

Even apart from such devices, surveillance will be easy. Both visual and auditory means will be light years more efficient than any devices now available. The major problem that has always impeded intelligence organizations – the massiveness of the data base – will be overcome by cheap supercomputers that utilize enormously efficient scanning programs that select key terms from the stream of information in which they are embodied and that interpret them.

It should be clear even from this brief selection of items that the means will be at hand to produce either a relative utopia or a 'Brave New World'. It is fortunate, indeed, that the Soviet system entered its crisis in the contemporary world rather than in this world. But it does not follow that we will escape the disastrous possibilities that are pregnant in the contemporary matrix.

How many in Washington, or in Beijing, can be trusted to solve current problems in a humane way if they have the opportunity instead to solve them in ways that perpetuate their rule and their perquisites? Are the values placed on the sanctity of human life, values beyond the state (God for many), respect, concern and empathy for others, honesty, and humility so strong in contemporary society that the survival of democratic institutions, or even of what we now regard as human beings, is assured?

I am not a Luddite. In fact, I am an optimist despite the weight of evidence to the contrary. But surely it is time to fear what the future may hold. The institutions that should be in the forefront of these examinations, the universities, are particularly deficient in their attention to these issues. They are caught up in the race for specialization. The linkage between realms of knowledge and understanding is neglected and even devalued.

In my graduate education, I often learned more from fellow students than from the faculty. I had intense discussions with physicists, mathematicians, psychologists, and so on. We sat in on courses in art, sociology, and literature.

On-line education has many merits. But it does not provide a setting for sustained intercourse among students of different areas of knowledge. On-line education undermines the influence of synoptic outlooks. And the growth and increasing specializations of the individual faculties promote the careers of academics who know more and more about less and less.

We need specialists but we do not need to pack the halls of learning with them. During the 1950s and 1960s there were institutions that made good use of specialists because they were led by humanely educated individuals. I was opposed to the break-up of AT&T because I knew it would undermine Bell Laboratories, which effectively linked specialists to larger issues. DARPA (the Defense Advanced Research Projects Agency) had a similar function. Like Bell Laboratories, it was a marvelous institution.

Even apart from the problems noted above, how will humans convince themselves of their value sufficiently to preserve decency, let alone democracy? As computers begin to mimic reason more successfully, the distinctions between humans and machines may seem smaller. Substitute parts for the body will be manufactured, again diminishing our sense of uniqueness. Some will argue for genetic adaptation to different environments – the sea for instance. Once we start, where will we stop? Will we begin to adapt humans to particular tasks?

What will individuals do with their lives to make them fulfilling? Most work, both blue and white collar, eventually will be done by machines. How much service work will be left? How many can write novels, paint pictures, or compose music? (And perhaps computers will do many of these things also.) What vocation will give life its value?

If computers begin to mimic intelligence, if individuals are adapted to different environments, if they are improved by prosthetic devices, if robots begin to perform more skilled tasks, how will this affect the self-conception and self-identification of humans? Will it undermine our sense of uniqueness and the humane qualities of life that are essential to liberal democracy? Or will it lead to greater sensitivity?

We have the myth that if only we can solve life's material problems – if only we can abolish hunger, sickness, and inadequate living conditions – we can create a utopia. But that may create only worse problems. Men used to get satisfaction from unskilled jobs because that provided for the family. Women received satisfaction from the important task of raising children. Both men and women seem less satisfied and more alienated in contemporary society than in earlier societies.

Ambition will not vanish. It may get more intense primarily because the number of avenues through which it can be fulfilled is diminished.

To what psychological dysfunctions will this give rise? To what political perversions?

Perhaps the reader may feel that I have vastly overstated the case. My optimistic side is inclined to agree with this evaluation. If there is an excuse for this exercise, it is to indicate that we should not be complacent in our defense of a society that is fit for humans. It is important to understand that liberal (in an older sense of the term) democratic institutions, which for the first time in human history make dignity a possibility for all humans, need intelligent defense if they are to survive and flourish.

There are many contemporary problems urgently in need of solution. The educational problem and that of moral values surely are among the most important. But other problems that could be even more serious may emerge before we become aware of them. It is good that contemporary society has set up committees of experts to discuss the ethical issues in such matters as gene splicing. We need to go beyond this, however. We need to examine how possible future developments may affect the solutions we institutionalize today. And we need to ask how these solutions today and in the future will affect the larger sets of values and institutions of society. An education that does not embrace these issues will be at odds with our deepest needs.

Finally I note a problem, recognition of which is not original with me and about which I have nothing significant to say. It may be that everything is too big and too complex today. A president cannot be aware of and cannot understand or control many of the activities of the government. He cannot understand how these activities will impinge on many of the organizations or individuals for whom he is responsible. This is true both of immediate and longer-term impacts. Corporate leaders are equally ignorant. The brightest and best informed among us differ from the stupid and ignorant only insofar as they command minute aspects of a much broader landscape.

Recognition that the best of us are stupid and ill-informed is at least a fraction of a step toward the types of solutions that may save us. But we face the danger that the most accomplished of us overestimate what we are capable of understanding. This will feed arrogance and further socially destructive solutions. It is important that our educational system be structured to produce an education that inspires us to deal with these complex problems. I do not believe that it does so either at the public school or the university level.

Notes

Introduction: The Unknown Kaplan: Synoptic Knowledge after Postmodernism

1. Parts of this essay appeared in an article published by *International Studies Quarterly* (Hamati-Ataya 2012), and are reprinted here with permission from the International Studies Association and Wiley-Blackwell.
2. I use the term 'interpretationism' as defined by Thelma Lavine (1950): 'The distinguishing feature of interpretationism … is an affirmation of the activity of mind as a constitutive element in the object of knowledge', that is, 'the epistemological principle that mind does not apprehend an object which is given to it in completed form, but that through its activity of providing interpretation or conferring meaning or imposing structure, mind in some measure constitutes or "creates" the object known'. 'Empirical interpretationism', on this view, 'insists that all interpretive structures conferred by mind are themselves empirically conditioned, and places the analysis of their conditioning in the hands of the biological and social sciences, thus seeming to vitiate the possibility of any cognitive certainty'.
3. It is in *Science, Language and the Human Condition* that Kaplan presents most explicitly his attempt to 'contribute to synoptic understanding' (Kaplan 1989[1984]). The book's original title stressed Kaplan's central epistemic thesis: *Man in the World: Glimpses into the Unity of Knowing and the Relatedness of the Known*.
4. The impact of these conditions on the definition of reality is well known to physicists. As Feyerabend (1989) puts it, 'the most fundamental and most highly confirmed theory of present day physics, the quantum theory rejects unconditionally projections and makes existence depend on special historically determined circumstances. Molecules, for example, the basic entities of chemistry and molecular biology, do not simply *exist* – period – they *appear* only under well-defined and rather complex conditions'.
5. One important project involved a computer model of a system that resembled a 'balance of power' system. The results of the simulations showed that the 'essential rules' of the system were replicated by the computer version of the theory.
6. The example is Kaplan's – correspondence with the author, October 2009.
7. '*System and Process* was published in 1957, the heyday of positivism in the political science profession. I was labeled a positivist both by supporters and detractors. However, … my opposition to positivism is unmistakable in the two appendices of *System and Process*. In one I explore how the selection and interpretation of evidence is influenced by alternative settings of mind. In the other, I inquire into the objective basis and evolution of moral values' (Kaplan 2005[1957], p. 1).

8. Their view seemed so paradoxical that Engels had to constantly explain it, as in the preface to the first German edition of Marx's *The Poverty of Philosophy* (1995[1884]). See also Engels' *Anti-Dühring* (1947[1877]).

1 The Operations of Mind that Produce Language

1. I do not use quotation marks when I refer to what historically was known as a balance of power system or any other system that closely resembles it. I use quotation marks when the reference is to my theory of that type of system.
2. Excerpt from Kaplan (1971), pp. 4–10.

2 Human Reason and a Common World View: Why Wittgenstein and Rawls are Both Wrong

1. Revised version of Kaplan (2006), an article originally published in *The Review of Metaphysics*.
2. See the masterful dissection of rigid designation in Leonard Linsky, *Names and Descriptions* (1977, p. 66ff). See also Kaplan (1989[1984], pp. 61–71). Hilary Putnam, in 'Mind, Language, and Reality' (1975, p. 975), admitted that neither he nor Kripke could make an epistemic case. But they thought they could find good examples. Each one they tried, however – for instance, 'yellow is yellow' or 'water = H_2O' – was shot down in turn.
3. In an extended series of e-mail exchanges with a member of a group of neo-Aristotelian philosophers who proposed the example of the end of a line, my learned and helpful interlocutor, Peter Redpath, has corrected to my great benefit mistakes in my understanding of Aristotle. Although we continue to disagree, I have learned much from him that was useful in writing this passage. I agree that stable designations have a kind of unity and permanence. But that is not identical to unity.
4. The classical Greek philosophers had no knowledge of how the neural system operates in the formation and employment of concepts. However, we now know that this process is inconsistent with an identity, even in the limited Aristotelian sense, between a sign and a concept. When an object or quality is recognized, signals fire from different parts of the brain. Although it would be a mistake, as Niels Bohr noted, to reduce brain to mind or mind to brain (complementarity applies, as it does in the wave/particle case: see Max Born (1962)), this indicates that concepts have a complex neurological context. They do not exist in a discrete form as do signs that mediate between the mind and referents. Thus, they *evolve* as the content of mind evolves. Furthermore, recent research shows that different parts of the brain are involved in top-down (general perspective) and bottom-up characterizations of the objective world. Unless computers can develop world views and apply judgments in the absence of strict analytic categories, they will not be able to engage in philosophy. I suspect that biological neurology, which computers now lack, is a condition for this capability.
5. 'I do deplore, as do you, the non-hermeneutical, noncontextual assumptions that underlie the way scientists, such as Wheeler, misunderstand the meaning and role of theory. But this is not just a fault of scientists, but also of many

philosophers who mistake symbols for the signified (what is meant) and theoretical equations for universal world structure'. Patrick A. Heelan, e-mail correspondence with the author.

6. Kaplan (1989[1984], pp. 79–122). These pages provide a critique of proposals for protocols of confirmation or falsification and a discussion of how the metaphor of fit is used to deal with judgments in a variety of fields.
7. See discussion of Schrödinger's cat in Chapter 5.
8. This is an infinite process. It is interesting to note the position Georg Cantor took when he claimed that some infinite sets are larger than others. It is true, for instance, that for the interval of 1 to 100 the set of integers is twice as large as the set of even integers. However, an infinite set is not something that exists but a process that is characterized by an algorithm. One infinite set may be 'sort of' larger than another but it does not have existence as a set (According to the Tristram Shandy paradox, if Tristram lived forever and if it took him a year to write up each day's events, then the older he got the farther behind he would be until eventually he would be infinitely far behind). This does not mean that the concept of truth is meaningless but only that *every claim of truth is limited*. Within their intensional and extensional limitations things do have a kind of unity and a kind of permanence. *The world is such that some types of interpretations, within their extensional and intensional limitations, function with enough reliability to permit understanding and communication*.
9. In 1917 three children claimed the Virgin Mary appeared, offered predictions, and stated she would reappear on several occasions. When a multitude gathered for a particular appearance, they claimed to see the Virgin, a vision of hell, and the dancing of the sun. Although some who were not in the local area claimed to have seen the dancing of the sun, most people did not. One prediction was that a particular two of the children would die soon and that did occur.
10. An analysis of Rawls's *A Theory of Justice* is presented in Kaplan (1976a, pp. 110–181). These pages offer a detailed refutation of the particulars of Rawls's argument and of the reasons for their adoption. They also critique special devices proposed by Rawls such as the reflective equilibrium, which depends upon supposedly universally true generalizations of social science. A critique of utilitarianism is also contained in these pages. A systematic discussion of the various types of choice theory and of problems in their application to complex real world events is presented in Kaplan (1957, pp. 167–250).
11. The only game for which this appeared to be true was the two-person zero-sum game, although, even so, it would hardly be an adequate foundation for a general theory. Then L. J. Savage pointed out the minimax regret criterion (See Milnor 1954). The prisoners' dilemma seemed to pose an absolutely dominant solution until one examined the relationship between raw outcomes and utiles. The prisoners' dilemma is a dilemma only if one specifies that the prisoners value jail sentences inversely with length and that they are indifferent to the fate of their colleagues. If the prisoners know they care about each other, tacit coordination may turn it into a cooperative game. The numbers employed for dollars in various games are determined by the von Neumann utility axioms, which invoke an exhaustive set of comparisons. (This is why it may be rational for some people to buy one, or even more than one, ticket for a Big Lotto even if the expected dollar value is less

than the purchase price.) Such comparisons depend on dense analysis. The test in principle also invokes a dense form of analysis.

12. The asymmetric bargaining game – and all bargaining games in principle are asymmetric – replicates the problem introduced into game theory by minimax regret. There is no single solution and, hence, no rule that is uniquely fair in Rawls's sense. However, in this case, it is not attitude toward risk but conceptualization of bargaining strength that is at issue.

3 Evolving Human Nature and Multi-stable Justice

1. See Kaplan (1968a, pp. 114–142). A detailed account of the problems of Rawls's original theory is presented here. These pages also call into question several criteria that Rawls employed but that are not central to this chapter.
2. Kaplan (1968a, pp. 47–106). These pages contain a point-by-point refutation of Stephen Toulmin's *Reason in Ethics* (Toulmin 1971). Each of Toulmin's arguments for the subjectivity of morals is examined and qualified. Morals are shown to have an objective basis in a human nature that is dispositional.
3. See *Alienation and Identification* (Kaplan 1976b). This book includes a discussion of alienation, ontological dysfunctions of mind, identification, authenticity, creativity, and justice. These are elements that are related to a transfinitely stable self that can maintain its sense of identity through transformations. This concept is the author's.

4 Meaning and Logic

1. It is not clear what empiricists mean by 'sensation.' The feel of a tingling or of warmth? The angstrom wave patterns that are transmitted to the eye? Or the content of the message that is carried by nerves from the optic receptor to the brain?
2. To the extent that Habermas's concept of linguistic competence draws upon Anglo-Saxon language philosophy, this chapter answers it.
3. Habermas (1973). For a discussion of the neo-Kantian aspects of Habermas's philosophy, see Kaplan (1976b, pp. 29ff).
4. A similar conclusion is argued powerfully from a different perspective in Wright (1979).
5. See Linsky (1977, pp. 66ff), for a rigorous refutation of Kripke's view that proper names lack sense, a position that is necessary to Kripke's conclusion.
6. Although Putnam seems to take a similar position on frames of reference, the position developed here excludes his thesis on necessary truth.
7. The reader who is interested further may turn to my discussion in 'A Note on Game Theory' (Kaplan 1968c).

5 The Nature of Reality as Illuminated by Quantum Physics

1. The first version of this article appeared in *The World and I* in August 1992. A later version appeared in Kaplan (1998c, pp. 141–153). This version has been adapted to my position in this book.

2. See Chapter 6.

8 Realism and Theory

1. See Hempel (1962, pp. 9–15), for an account of nomological–deductive methods.
2. See Hempel (1965, pp. 457ff) for a discussion of lawlike sentences and dispositional sentences. For the original formulation of reduction sentences that connect dispositional concepts to lawlike statements, see Carnap (1936, 1937). I reiterate my great respect for Carnap despite my rejection of his position.

10 Tribe and Scalia on the Constitution: A Third View

1. This chapter is a substantially revised version of an article published in 2003 in *The World and I*.
2. I mean by right a right under the law. I am not referring to so-called natural or philosophical rights.
3. The precision of Latin and the ability of Rome to rapidly change its small body of law minimized this problem.
4. According to a *New York Times*/CBS News survey reported in the January 16, 1998, issue of the *Times* (Goldberg and Elder 1998), 61 percent believe abortion should be permitted in the first trimester and 28 percent say it should be forbidden. The figures for the second and third trimesters are 15 and 66 percent, and 7 and 79 percent, respectively. Fifty percent believe abortion is murder, and 38 percent say it is not murder. Forty-five percent say abortion should be available but subject to stricter limits, while 22 percent say it should not be permitted.
5. One English court has already bitten this bullet. According to that court, a mother is not responsible for the harm done to a child in its fetal stage, because it had no rights prior to birth.

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