History After Langacker: Extending Unified Concept Theory to the Human Sciences

November 21, 2016

Abstract

Starting from Josepth Goguen's "Unified Concept Theory", I endeavor to extend to provisional comments which Goguen makes about the general notion of "concept" in the social sciences and humanities. I hope to explore this notion in the more specific domain of Phenomenology and Cognitive Science as well as, with all due qualifications, the larger domain of human sciences. The cognitive and mathematical theories which Goguen foregrounds have well-elaborated formal structures, and this allows Goguen's expertise in mathematical Category Theory to identify and model both structural parallels and interesting structural contrasts between different accounts of concepts. Category Theory is harder to apply to humanistic writings, of course, but as a kind of mathematical Structuralism the intuitions which are honed by Category Theory can perhaps find a correlate in Structuralist meta-theories which do have an interpretive role in the general humanities. So I do not presume that the scientific commitments of cognitive linguistics — or even of an Analytic or "naturalized" phenomenology which is sympathetic to natural science and to certain methods in the Analytic philosophy of mind — are representative of humanistic paradigms; but I do believe, beneath the paradigmatic textual layers, there are structural formations and cognitive intuitions which can be traced across writings from different perspectives. Those perspectives which are receptive to formal models, including cognitive linguistics and some Phenomenological work, may therefore provide theory strucures through which analyses from other humanistic perspectives may be read.

Culture is an emergent system whose finer-grained constituents are individual cognitive acts. Cognition, in this setting, does not generally occur in isolation, but within broader mental states which incorporate perceptual and emotive details. So culturally meaningful cognition may be choosing whom to vote for, but also reasoning through the moral sentiments raised by political policies; instinctively merging concepts and sense-data within cognitive-perceptual manifolds; and acting purposively in embodied, interpersonal social situations.

There are now several deep volume's worth of research and argumentation

which merges cognitive science and phenomenology, so as to connect the cognitive domain to broader conscious, personal, and intersubjective realities. Insights from cognitive linguistics are similarly generalized to culturally salient signifying systems and communication. So I take as given the multi-faceted texts of Ronald Langacker, Jean Petitot, Peter Sambre, Saun Gallagher, Don Zahavi, etc. I do not intend to review this emerging constellation here: my interest right now is to take this work as evidence that a productive unification of cognitive and phenomenological themes is possible, and consider the larger implications of this corpus for relating cognition to culture, society, and politics. Since the general notion of concepts is a fundamental concern of cognitive theory, a worthwhile question is how a "Unified Concept Theory", proposed on the basis of different approaches grounded in cognitive linguistics, may be extended to other reaches of human science.

I believe that a "culture as emergent system" model can be one framework for relating culture and cognition, one which then introduces themes of reduction and emergence, ontological dependency in different forms (for example, eliminative and not), inter-theory relations and semantic bridge theories, and multiple scales of ontological, descriptive, analytic, and explanatory focus. I do not intend to review these theoretical possibilities either; instead, the trajectory of a hypothetical Unified Concept Theory, extended into more general humanistic territory, provides I believe a good case-study from which other representations of a proposed emergence-and-non-eliminative-reduction architecture within culture/cognition supervenience (or some less restrictive quasi-supervenient multi-scale relation) may be explored.

Goguen's unification strategies are informed by Category Theory, and many cognitive systems or particular models have enough internal structure and formality to be appropriate as Categories. Although the realm of theory-structure (if we include theory in the sense of "humanities theory" and structure in the sense which a human-science scholar would think of "Structuralism") is clearly more general than the class of structures accessible to Category Theory, at least this theory goes beyond purely quantitative models. From their defining axioms, categories need not involve any notion of number, or even of (mathematical) sets, insofar as functors which in more mathematical settings would targeet the category $\mathbb{SET}$ may instead map to structures of more cognitive interest, such as graded (aka fuzzy) sets, or mereotopological spaces. Where the boundary lies between this structural generalization beyond quasi-mathematical domains, and bonafide humanistic Structualism, I do not care to speculate. But Category Theory can, I believe, be a good pencil-sharpener for our intuitions around a Structual View of (humanistic) Theories (and vice-versa), which I think is another reason why Goguen's tactics for Unification are interesting.

Among the writers Gogcen considers, I will follow up mostly on his men-

tions of George Lakoff, Gilles Fauconnier, and Peter ∼Gardenfors. Goguen takes John Sowa seriously as well (it may be relevent that Goguen, Sowa, and Langacker were all tenured at San Diege), but his treatment of Sowa's Conceptual Graph Semantics focuses on its isomorphisms with First Order Logic and his own Order Sorted Algebra, which tends to understate the represenational and intuitive economy of Conceptual Graphs, and their place (alongside their Description Logic cousins in the Ontology Web Language sense) in contemporary technology. I will not consider Sowa here, or the more mathematical corners of Goguen's unification, but I will mention Conceptual Graph Semantics several times. To reiterate, I will organize this paper around specifically cognitive-linguistic models deemed relevant by Goguen, then consider their relationship to Phenomenology, and then more general humanities.

1 Without Further Ado

Joseph Goguen's "Unified Concept Theory", elaborated particularly in the paper "W"hat is a Concept , unifies several different approaches and traditions in the general analysis of concepts, bridging disciplines like linguistics, cognitive science, computer science, and mathematics. Goguen's own research shows a similar range of disciplinary interests, but he is particularly associated with mathematical Category Theory, a branch of mathematics which develops method for unifying many results and formulations in diverse branches of mathematics. Goguen certainly seems to envision Category Theory as a good case-study in disciplinary unification which can be an inspiration for similar unification strategies in other fields, like linguistics and cognitive science. Furthermore, he uses Category Theory as a foundation for discussing connection between several more formal and technical theories of concepts, while acknowledging that the abstractness and generality of Category Theory may prevent this particular unification strategy from being adopted more widely, in less technical contexts. At the same time, he also explains that he envision a unified approach to concepts which extends beyond just mathematics or cognitive science, and can be of interest and applications to humanistic and social-scientific fields. To that end, he does integrate several "concept theories" amongst scholars in such areas as the sociology of science, while admitting that his section on "Concepts in Social Science" is briefer than the other parts of his analysis. His language seems to invite others to explore more robust ideas for extending his Unified Concept Theory to the social sciences and humanities.

This paper will explore one avenue for such unification. I describe this proposal as a *Unified Concept Theory* for "human sciences", using this to mean both humanities and social sciences. It may seem that Goguen's largely mathematical approach — emphasizing formal logic and Category Theory — would be difficult to carry over to a more humanistic context. However, it should

be noted that mathemtical systems are not necessarily quantitative, and that quantitative frameworks, in turn, are not necessarily "empirical", or based on empirically obtained data. We need to respect the separation of the concepts or notions of "mathematical", "quantitative", and "empirical" or data-driven (I I will try to use the term "notion" to refer to *theoretical* concepts — in other words, ideas developed by a theory being considered, as opposed to *concepts* in the sense of that which a "theory of concepts" seeks to study). Humanities methodology seems to get wrapped in controversies when it comes to the proper role of empirical data and quantitative analysis, so we need to be careful to avoid any methodological dogma. A robust and flexible humanistic framework probably has a role and place for empirical, quantitative, and mathematical analysis, as well as more interpretive or "hermeneutic" methods.

Indeed, in this paper I will argue that some theoretical links do exist between more mathematical frameworks developed in fields like cognitive science and computational linguistics, with mrre interpretive or speculative strategies popular in theoretical strategies like Phenomenology or Cultural Studies. Mathematical, again, does not necessarily mean quantitative; there are mathematical frameworks — like Qualitative Spatial Reasoning, Modal Logic, and Mereotopology — which are applied not to numeric domains but to systems of reasoning, perception, or spatial (and spatio-temporal) relations. There are also frameworks like Fuzzy Logic, Neural Network Modelling, and Latent Semantic Analysis, which employ numerical methods but are intended to suggest or simulate the statistical and dynamic processes involved in (qualitative) learning and cognition — in other words, they do not assume that areas where they are applied (like spoken language or learning theory) are intrinsically quantitative; only that they exhibit statistically meaningful patterns whose trace can be observed by numerical methods.

Moreover, both the distinctness (and also interrelationships) between the notions of *mathematical*, *quantitative*, and *empirical*, and the theoretical chains linking these styles of analysis to the majority of human sciences, seem to have been brought into clearer focus by the evolution of computers and computer technology. The desire for more powerful and precise search engines, for example, has spurred research into the mathematical (and therefore computationally tractable) recognition of linguistic meaning, and the desire for realistic computer graphics has similarly focussed attention on both the qualitative and quantitative aspects of perception and perceptual experience. Hybrid disciplines, like Virtual Reality or Virtual Reality Therapy (which integrates computer science, medicine, psychotherapy, and Phenomenology), have created practical incubators for interdisciplinary research and research teams. Internet technology has also helped disparate scholars and research project to communicate and integrate: a single web search, for example, can identify articles which jointly mention two different experts in two separate fields, for example, or can identify common terms used in different contexts. Instead of academic disciplines being

4

isolated on institutional islands, the terminological, conceptual, and intertextual links between them can be better identified through modern technology and through the use of the World Wide Web (and not only libraries or print journals) to disseminate academic work.

But even focussing more narrowly on the writers who are explicitly mentioned in Goguen's articles, we can identify many themes and approaches which help lay the groundwork for a "general concept theory" in a human-scientific context. Even though Goguen focuses on researchers' more formalized or scientific theories, several of the authors he considers have also done significant research in areas traditionally recognized as core humanistic subjects, like culture, politics, and society. George Lakoff, for example, has written several books on politics and has also been very active and engaged in using cognitive-scientific research to influence political discourse in the United States. Lakoff argues that voters' political beliefs are influenced by "conceptual frames", which systematically organize a person's moral values and their cognitive representation of social structures. These frames are "activated" by certain use of language, and politicians or activists who adopt a popular usage — and who do so even when the wording originated with activists who take a different side on relevant issues — can struggle to defend their proposals, because the very language which they use subconsciously suggests to people a conceptual frame in competition with their own views. Lakoff furthermore suggests that there is one central metaphor which shapes the dynamic of American politics, a metaphor of the "nation as family", in which competing visions of the emotional structuration of the family — a more conservative "stern father" model and a more liberal "nurturing parent" model — become mentally translated, in citizens' minds, to opinions on matters of economics and policy.

Lakoff's repeated insistence on this one central metaphor makes his theory of American politics less intricate than those whose academic ouevre focusses more primarily on social and political manners. Lakoff's political writings have relatively less internal structures, less parameters of theoretical argumentation. Nevertheless, Lakoff raises themes which can also be found in a broad spectrum of humanities theory, where philosophical inspiration is drawn from a range of methodological perspectives, ranging from Structural or Lacan-inspired social analysis, to "gender studies" and related paradigms organized around social costructions of class, gender, ethnicity, or sexual orientation. Also, Lakoff brings to bear a keen observer's eye for some of the instituitions and dynamics which have concretely shaped American political discourse for decades — the "think tanks" which have explicitly recommended particular terminologies, for example, sensitive to their persuasive effects; or the very concrete integration of social-conservative visions of family structure and conservative politics. Lakoff does not analyze the "family" metaphor as some kind of hidden "deep structure"; he shows how the same charismatic figures and media outlets which embody a conservative vision of the family also promote socio-economic poli-

cies consistent with the idea that the nuclear family becomes a metaphor for a national community.

In his *Unified Concept* article, Goguen attends to Lakoff's approach to metaphor, but focuses less on his practical political engagement but rather on his analyses of metaphor as very general tool of human thought; of a tendency for conceptual frames associated with one context to be borrowed or overlayed by some different context. This is a central theme of Lakoff and Mark Johnson's influential work on "embodiment", which includes detailed analyses of how our embodied situation relative to our environment provide conceptual schema which are metaphorically adopted to more abstract, cerebral contexts. Lakoff and Johnson analyze "cognitive" metaphors in which spatial or temporal relations provide structure to general systems of ideas — metaphors like "More is Up" / "Less is Down" (as in, "his popularity rose"), or "Time is Space" / "Time is a Journey" ("the days went by quickly"). This is part of a general attempt to systematically study how our cognitive faculties come to bear within our embodied, physical interaction with our surroundings.

Here already, then, we find in Lakoff or Lakoff and Johnson two different lines of argumentation, one concerning the largely subconscious activation of conceptual frames in the presence of particular linguistic or situational cues, and one focussing on concepts as part of an embodied, physically operational dynamics. If the former theory has some resonance with humanities research on topics like political ideology and political identity or communal recognition, the latter thematics also resonated with analyses of the embodied nature of personal identity — as a domain where issues of class or gender, for example, become concrete for individuals in a very direct, personal way; or of how the physical infrastructure of one's environment has economic and political consequences — an important analytic in domains like urban studies and cultural semiotics. In *Whose Freedom*, Lakoff brings these lines of analysis together: arguing that "contested" concepts (like freedom) have (sometimes politically) divergent extensions beyond a prototypical "core", and also showing how embodied freedom and mobility (the ability to reach out or move to something, for example) provides a metaphorical basis for conceiving freedom in general.

Goguen's article discusses how Lakoff and Johnson's account of metaphor belongs to a general theory of the *organization* of conceptual frames, because structures within one frame can "metaphorically" adapted to other frames. This notion, in turn, is developed in greater detail among other researchers who Goguen details, particularly "Concept Integration" theory (also called "Conceptual Blending"), pioneered by Gilles Fauconier and Mark Turner. This theory also has applications beyond the specific domain of cognitive linguistics, and can be extended to the formation of paradigms or conceptual frames generally, by analogy to (or perhaps as a systematic formalization of how) metaphor in

language becomes adopted to metaphor in thought generally. Fauconier and Turner, for exaple, show how a semantic element like "houseboat" blends properties from two different frames: houseboats are residences, like houses, they float, like boats, etc. We can easily envision this kind of analysis being adapted to political contexts, like Lakoff's work on metaphor — how the progressive environmental movement, for example, blends concepts of environmental preservation with those of social justice. More rigorously, perhaps, Concept Integration has been applied not only to general semantic constructs, but to perceptual and sensory gestalts which resemble Lakoff and Johnson's accounts of embodied cognition. XXX's very thought-provoking analyses, for example, describe concept blends in which one part of the blend is not a fairly abstract semantic frame, but rather some immediate perceptual object — examples include children playing with imaginary "Star Wars"-like light sabers, or expressions such as "this fence runs down to the river". The idea is that conceptual schema are overlayed onto perceived things (some object to serve as the "handle" of an imaginary lightsaber; some portion of a real fence seen), and from this integration the perceived contents are extended into components of a larger perceptual/cognitive synthesis, which incorporates the perceived and the non-perceived into a more expansive whole.

Considering Lakoff and Fauconnier in particular, we can say that theories of concept blending and metaphor are an area of overlap between two different, multi-faceted theories of the organization of conceptual frames. Lakoff's writings, for example, emphasize the role of conceptual *prototypes* as helping to organize systems of concepts; concepts do not apply equally to all of their instance, but rather are organized around degrees of similitude and relatedness to prototypical examples. This "prototype" theory complements Lakoff's analysis of metaphor as a principle of organization (and integration between) conceptual frames. Fauconnier, by contrast, emphasizes how conceptual "spaces" are layered and integrated within linguistic or cognitive acts. Fauconnier's investigations are directed at problems of reference and identity between contextually connected frames, and how these frames both share and differ in their structures. For example, phrases like *in the painting...*, *in the movie...*, *when I was young...*, or *I wish...*, establish some point of contrast between two different frames or "spaces": the present and the past, real life and a fictional space, the way things are and the way someone may wish them to be. But these spaces are also linked by referential threads: "in the movie, XXX was a journalist", for example, borrows the referential force of an actor's name to designate the character he plays. Fauconnier's analyses are more detailed, and address more complex scenarios where multiple spaces intersect; my point here, however, is to contrast (following Goguen) Fauconnier's theory of the organization of conceptual spaces (or frames, if we can adapt this term for point of contrast), with Lakoff's theory of the organization of conceptual frames. One important feature of the former theory is its emphasis on *referential* connections between conceptual frames, in other words, in identifying and individuating the bearers

7

which *instantiate* concepts, whereas Lakoff foregrounds more the *organization* of frames, the ways in which concept-instantiations can differ in degrees of force or can be metaphorically projected across frame boundaries.

I find thematic links between Fauconnier's work on *Mental Spaces* with the property-oriented theory of reference developed by Michael Jubien, whose approach, like Fauconnier's, presents a very lucid treatment of subtle problems related to fictional or counterfactual reference. Jubien's persuasive analysis some twenty years ago, in *Ontology, Modality, and the Fallacy of Reference*, implies that problems of reference in counterfactual contexts, in particular, reveal deeper problems in conventional philosophical talk about reference and identity. In assessing semantic and cognitive meaning, Jubien points us toward an approach which centralizes the properties which are identified through referential semantics, rather than the referents which may bear those properties. For example, there is no real thing which corresponds to the referring expression *Sherlock Holmes*, and yet Conan Doyle's stories provide a context in which the property of *being* Sherlock Holmes is associated with other properties, like living in London. This is why it is *true* that Holmes lives in London, and *false* that he lives in Oualamogong, and *possible* for someone to believe that Holmes was English. We can follow Fauconnier and refer to the Holmes stories as a conceptual space or frame, but follow Jubien in analyzing the structure of this frame in terms of relations between *properties*, including properties borne by singular substrata (what Jubien calls "singulary" properties, and which can provide a theory of the semantics of uniquely referring expressions), as well as properties which define classes or sorts, like *being English* (which Jubien calls "sortal" properties). Taken together, Jubien's and Fauconnier's analyses provide a powerful framework for exploring how we can reason through conceptual relations and networks even in cases where we are fully aware that some of the concepts or entities involved are fictional, counterfactual, lacking in actual instances, etc.

If we then further consider Lakoff and Johnson's analysis of frames and metaphor, we can additionally point out that conceptual frames in their sense provide a matrix in which ideas and situations can be recognized — even in fictional, hypothetical, or counterfactual contexts, that is, where we do not actually have perceptually or concretely before us a set of tokens for all the relevant concepts. We can project the "stern father" or "nurturant parent" metaphors onto fictional characters, or onto purely hypothetical bearers (we can speculate that an unruly child may have acquired different attitudes with a sterner father, or that a shy student may have acquired more self-confidence with more nurturing parents). On the other hand, the efficacy of conceptual frames in allowing us to conceive and make sense of (various kinds of) *counterfactual* contexts leads to the further question how how our cognitive orientation to *actual* contexts is *different from* this counterfactual or hypothetical reasoning; in other words, how concepts come to bear in situations where we *do* have concept-bearers perceptually or experientially before us, in contrast to when we

8

reason more abstractly through the inner struturation of conceptual frames.

Alongside Lakoff's and Fauconnier's accounts of conceptual frames (or conceptual spaces, mental spaces, etc.), Goguen contrasts a third multi-faceted theory of *Conceptual Spaces*, specifically the work of Peter Gardenförs, and particularly the book with that title. In Goguen's terms, ∼Gardenfors tends to identify a "geometric" organization of conceptual frames, in contrast to Lakoff's or Fauconnier's "structural" analysis — *geometric* here referring to the idea that collections of related concepts can be associated with quasi-mathematical dimensions and therefore engender partitions on a mathematicized "space". The canonical example is color, which can be given several different encodings, such as a red/green/blue cube (though Goguen considers a more complex system). Color concepts can then be mapped onto regions within this cube, so the extensions of and boundaries between concepts can be identified with geometric structures. Similar analyses can be provided for other sense-modes, like sounds and scents. Goguen contrasts this quasi-mathematical account of concepts' extensions with the more "structural" theories of Lakoff or Fauonnier, which emphasize relations (and particularly relations *of association*) between distinct concepts — and not only concepts with such obvious comparability as different colors, for example.

However — like Lakoff's prototype-theory — the idea of *similarity* as a foundation of concepts' extensions is a major theme in *Conceptual Spaces*. Indeed, although some specific concepts have a more direct quantitative representation — the fact that colors can be reproduced with computers, or blended from primary-color paints in different propropotions, gives us as way to numerically measure individual color points — for many concepts, a quantitative model of their extension is only available by defining degrees of similarity to prototypical examples. Respondants, for example, can sample different foods, and ask to what degree they resemble some canonically sweet or salty flavor. More complex conceptual spaces can be built by comparisons of similarity which have multiple parameters of comparison, which can lead to models involving a structured network of comparative relations, which can be considered alongside Lakoff's model of conceptual frames or Fauconnier and Turner's conceptual blends. So the contrast between geometric and structural concept-spaces, through which Goguen contrasts these writers, is not so clear-cut. However, ∼Gardenfors does bring attention to the question of how conceptual extension and applicability can be modelled numerically — even if only in an ad-hoc, suggestive fasion.

I have already alluded to the kind of "as-if" or, if we can be a little clever, a "qua-quantification" or "qua-ntification", a numerical model of a cognitive phenomena which is intended to be suggestive, rather than exact. For example, ∼Gardenfors in *Epistemic States* analyzes the phenomena of belief-revisions, where systems of beliefs have to be modified when they are realized to be

mutually inconsistant. In so doing, ∼Gardenfors introduces a notion of "entrenchment", where less-entrenched beliefs are dropped more readily than more-entrenched ones. This introduces an "as-if" numerical order on beliefs, *as if* there were some numeric measure of entrenchment in the mind, even though obviously we cannot attach little red numbers to beliefs. Such quantitative models may sometimes prove useful for computer simulations of cogntive processes — which, as Search Engines show, can be very useful tools — but even in the absence of these applications, quasi-mathematical formulations of cognitive frames can be usefully suggestive. By analogy, Fuzzy Logic can be a suggestive model of uncertain reasoning, even if we do not literally attach "grades" to concept or property instantiations.

Gardenfors therefore makes extensive use of quasi-mathematical models to analyze the organization of conceptual spaces (or frames, and also epistemic states, etc.). But ∼Gardenfors, like Lakoff, is critical of the *kind* of mathematical intuition which has shaped linguistic models in previous generations, often seen through the lens of first-order, symbolic logic. One unifying theme in *cognitive* linguistics, in contrast to what Lakoff describes as the "symbolic" paradigm, is the search for *alternative* mathematical models to symbolic logic — Fuzzy Logic, Qualitative Spatial Reasoning, Rough Sets, Category Theory, and so forth. Gardenfors certainly situates his own research sympathetically to scholars like Lakoff, Goguen, and Fauconnier: xxx. What is interesting about this passage — aside from how ∼Gardenfors identifies the geograpgic proximity of numerous leading figures in cognitive linguistics — is his identification of Jean Petitot as engaged in a similar project.

Petitot's work does share many topics with the "mainly Californian" scholars who (as it happens) Goguen also emphasizes, but Petitot is additionally more directly engaged with a Husserlian or Merleau-Ponty inspired Phenomenology: co-authoring or co-editing articles (or the volume on *Naturalizing Phenomenolo*) with leading American phenomenologists, like Barry Smith and David Woodruff Smith, and writing extensively about Husserl and Phenomenology, particularly in relation to computers and Artificial Intelligence. Petitot provides thought-provoking quasi-mathematical or "as if" numerical models of experiential or perceptual processes. In some of his texts Petitot tries to provide detailed, scientific and mathematical theories of perceptual phenomena, such as analyses of neuronal organization that can give rise to phenomenological reports; but the significance of this strategy goes beyond the specific analyses and data which Petitot considers, but the larger idea that mathematical analysis can be *suggestive* of the processes by which neuronal structures provide a base physical level which causally engenders the rick, experiential detail of phenomenological consciousness. Petitot therefore seeks scientific accounts of the physical substrata of *experience* in particular, treating the sentience, conscious awareness of percepual reality as a crucial aspect of the cognitive realm.

Given this Phenomenological orientation, Petitot can be considered alongside, in addition to "California" cognitive linguistics, a cluster of scholars who are sometimes described as "Analytic" Phenomenologists — writers like Hubert Dreyfuss, Aaron Gurwitch, Barry Smith, David Woodruff Smith, and Ronald MacIntyre. This group is rooted in Husserl's phenomenology, but reads Husserl's works through the lens of Analytic Phenomenology and Cognitive Science (in some combination); in effect, seeking to reconcile the nuanced, first-person accounts of phenomenological description with the scientific investigation of the physical origins of mind and consciousness. We therefore find both presentations of formal (scientific, mathematical, or computational) models of perceptual or cognitive processes, but also consideration of how such models may distort or oversimplify actual neurology and experience, sometimes thereby engendering more nuanced and refined formulations. For example, the direct numerical encoding of perceptual manifolds and qualities, like color — the location- and color-vectors of computer graphics, for example — can provide convincing, but not wholly realistic, visual representation. The mathematical notion of a single (theoretically indivisible) perceptual "point", an infinitely fine-grained spatial extent with one exact (real-valued vector) color value, is both an idealization and a simplifcation; in reality we perceive colored *regions*, with varying degrees of attention to detail. The goal of providing models which more faithfully represent perceptual reality lies behind domains like Mereotopology, a region-based theory of space which can sometimes substitite for (point-set) topoology, or Mereology (or a "theory of partitions", to quote Barry Smith) as a substitite for mathematical set theory.

The purely mathematical comparison of different frameworks — proving how thoroughly different axiomatizations of mereotopology can replicate results in Algebraic topology, for example — is arguably only tangential to the philosophical or cognitive intuitions which inspire interest in alternative formulations, like Mereotopology, in the first place. Nevertheless, developing formal models of (say) qualitative spatial relations is a useful symbol for our general concern for formalizations which both approximate and honor the nuances of perception and cognition. Using axioms based on regions rather than axioms based on point-sets may not make Mereotopology an exact replica of spatial cognition, but it serves as a kind of inter-theoretic reminder that formal models are imperfect but corrigible, both empirically and abstractly. In this spirit, "Analytic Phenomenologists" both attend to and also critically evaluate formal cognitive-perceptual models. This perspective also involves an engagement with (largely Analytic) Philosophies of Mind to explore the physical media through which formal models *can* in fact represent mental reality; often suggesting that consciousness has a physical explanation or substrate, but refusing to follow this presumption to an "eliminative" conclusion, that talk about conscious states or first-person, subjective reality is ontologically problemmatic.

So Petitot largely endorses John Searle's defense of "first-person" ontol-

ogy on the grounds of consciousness being (plausibly) an "emergent" system in a physical substratum, and endeavors to capture mathematically the relationships between a redutive (neurological) base and an emergent (experiential) phenomenology. David Woodruff Smith, similarly, develops a notion of "multiple aspect monism" to suggest that a single reality (e.g. the physical thereness of brain processes) takes on multiple aspects or explanatory layers (including a conscious dimension, analyzed through phenomenology; a neuronal layer, analyzed through neuroscience; and a physical or molecular layer, potentially analyzed through physics). One recurrent theme in this line of investigation is how *discrete* (viz., non-continuous) neuronal structures give rise to the experiential continuity of perceptual manifolds: in his contribution to *Naturalizing Phenomenology*, for example, Petitot considers different formulations of the "topology" of perception, which can only be imperfectly captured by analogies like that of a visual manifold as a bitmap image, with colors and locations modelled as real numbers. Similarly, Woodruff Smith reveals inspriation from Whitehead's "process philsophy" and its investigation of the ontology of space and time — the same investigation which motivated formal Mereotopology. So there is an active concern with contrasting experienced space or the "space of experience" with formal spatial systems, particularly a simplisitc "bitmap image" model — analogous to how Lakoff uses prototype theory as a contrast to "symbolic" notions of concept-extension, as essentially akin to First-Order predicates, identified with the set of their instances.

It is also worth mentioning that leading Analytic Phenomenologists, accepting this term, are also associated with the US West Coast, including Woodruff Smith, Dreyfus, and (tangentially) John Searle. But despite the thematic and geographical proximity which we might notice between Analytic Phenomenology and Cognitive Linguistics (or at least the "mainly Californian" milieu discussed by ∼Gardenfors and Goguen, who himself had a long career at San Diego), the differences between these academic clusters are also noteworthy. While both tendencies show a common dynamic in both exploring formal models and critiquing overly simplistic or simplistically mathematical models (like First Order logic), they tend to differ in terms of what the desired balance is a balance *between*: on the one hand, a commitment on the part of writers like Lakoff and Johnson to respect the complexities of an active, dynamic, embodied interaction between people and their environments; on the other hand, a Phenomenologist's sensitivity to the experiential nuance and immediacy of perceptual awareness. To the degree that both of these research projects are important to a "unified concept theory", we then must attend to the philosophical and methodological variations which can arive from these differences in perspective.

George Lakoff, for example, emphasizes that conceptual frames are mobilized in largely unconscious ways and for largely unconscious reasons. "Thoughts are unconscious", he emphasizes in *Whose Freedom?*, and elaborates that they are "not subject to introspective investigation". But this raises the question of to

what degree *introspection* is indicative of consciousness (and serves to distinguish consciousness from pre-, sub-, or unconsciousness), and whether *conscious* is the same as *introspectible*. Certainly the political beliefs which Lakoff analyzes are not *entirely* unconscious or instinctive. We may not introspectively know *why* certain semantics or situations trigger certain conceptual frames, but we may be introspectively aware of the effects of these frames having been activated, insofar as they affect our feelings with respect to some fact or idea. Once we are familiar with Lakoff's theories of the subconscious salience of family metaphors in American political reasoning, for example, we may identify this dynamic in our own political beliefs. It is pretty obvious that Barack Obama has consciously cultivated a "nurturant parent" image, and it is not hard to imagine that those of us who mostly support Obama project these "nurturant parent" values onto other aspects of his platform, or that his credibility in embodying this image is part of why we like him. Moreover, although Lakoff backs his analysis with empirical data, his description of the process by which he developed the theory — at least as recounted in *Don't Think of an Elephant* — reads more like an account of introspection than of sociological number-crunching. Lakoff's phraseology in this account repeatedly narrates reasoning like "I asked myself", "I considered", etc.

Politicians, also, seek not only to convince voters of the intellectual superiority of their ideas, but to mobolize voters' passions and activism: they struture their language so as to capture conceptual frames realted to Freedom or to Families precisely because these frames carry particular emotional weight and affect, and this affectivity will stir voters' sentiments when they are activated. So preconscious frames — adopting this wording since "unconscious" can carry many extra connotations — manifest their influence through consciously experienced decisions and affects; we cannot analytically eliminate the importance of experiential intensity in this theory. Similarly, with respect to a phenomenological investigation of perceptual awareness, I mentioned earlier that conceptual frames can allow us detailed reasoning and judgments about fictional, hypothetical, or counterfactual situations. Insofar as we make judgments about *perceptually present* phenomena, this direct awareness lends an affective presence, a kind of marker of our immediate environing situation as local and actual, in contrast to situations which we can conceive only though the more abstract media of conceptual frames. So we need to investigate how a kind of "affectivity" marks both the causal efficacy of preconscious frames as they influence our conscious decisions and passions, and also the phenomenological manifestation of preconscious cognitive or neurophysical patterns which are activated by our sense-receptivity to actual, immediately surrounding reality. I conclude, then, that while we need to recognize the preconscious dimensions of cognitive processes which are indeed, by nature, most often preconscious (rather than fully consciously experienced), we also need to theorize the preconscious on a continuum with active and passive, senseory and epistemic (viz., awareness of believings not involving current sense-impressiosn), conscious states. Defining

the structure and parameters of this continuum demands a phenomenological as well as coginitive treatment.

I have mentioned numerous writers so far, but even narrowing attention to just five — Lakoff, Fauconnier, and ∼Gardenfors, who were each part of Goguen's initial analysis, and Jean Petitot and David Woodruff Smith — we can find a spectrum of perspectives on concepts as mental objects and as predicated in extra-mental things. There may be differences of priority, but there is an overlapping set of issues and alternatives, through which these perspectives may potentially be stiched together. I will try to outline these in the next section.

2   Issues in a Theory of Concepts

My goal here is to schematically organize some of the issues I have discussed so far, not only with respect to analysis of concepts and concept-frames in isolation, but also concerning the relation between concepts and such notions as consciousness, introspection, physical correlates of mental reality, and the existence (or nonexistence) of concept-instantiations. A "unified theory" of concepts should consider, then, at least the following:

- Distinguish concepts which have bearers from those which remain uninstantiated — though they may reside within frames or networks in which we can reason about them in either case (we believe/know/accept that Holmes was English);

- Distinguish concepts which identify sorts or types, with numerous possible examples, from concepts which intrinsically can have at most one bearer (or one bearer at a time), like the concept of Sherlock Holmes, or of the President of the United States;

- Distinguish the preconscious organization and the activiation potential, latency, or dispositions, of conceptual frames, from the conscious perceptions, affects, or beliefs which are engendered by these activatios;

- Distinguish the phenomenal manifestation of these activations in operational, embodied interactions with our surroundings — including movements and motion which itself is partly or largely preconscious, not rising to full, active awareness — from the mobilization of conceptual frames within active (rather than passive) awareness, attentional direction and focus, and the individuation of perceived entities;

- Distinguish concepts which inhere as a matter of general tendencies, behavioral dispositions, and overall situations, from those which inhere as a matter of direct perceptual identification and variation — between how Barack Obama, for example, exemplifies the concept of Liberal (in the

14

sense of American political discourse), from how an apple bears the concept of red;

- Distinguish conceptual frames which serve to organize some universe of discourse or thought (like Liberal and Conservative, Democrat and Republican, Congress and a Presidency, etc., viz-a-viz US politics), from conceptual frames which organize mental schema insofar as we form a mental map of surroundings, as we navigate around, interact with, and reason about them.

With respect to ∼Gardenfors's "geometric" conceptual spaces, for example, we can consider how any given concept — a color like *red*, say — corresponds to some region within a (quasi-) mathematical space, but we can also consider how the continuous possible variation of concept-instances corresponds to a continuous variation in the sites of instantiation. To put it differently, just as there are (at least relative to perceptual acuity) continuous variations in color hues, so color can vary incrementally along colored surfaces. It is not precisely correct to say, then, that an apple *is* red, in the way that Obama is a Democrat; instead, the colors distriuted along the surface of the apple are mostly red, but the actual instantiation, the binary relation between the apple and the color, spreads over a spatial extension. Moreover, we do not first perceive the apple's shape, and then, with the apple in our minds as a distinct referent, identify its redness (the way that we can, for example, identify Barack Obama just as a person, and then subsequently learn that he is a Democrat). The redness is an intrinsic and necessary part of identifying the apple's presence and appleness — recognizing it against a background, identifying its shape, and so forth. We apprehend the apple and the redness simultaneously.

In an artificial setting like computer graphics, we can model an object's coloration as a map from points on its surface to a color space — numerically defining dimensions along an apple's surface (a process sometimes called "*uv* -mapping" in computer graphics) and, for each point, identifying its (mostly reddish) color. But, at least from a cognitive-perceptual viewpoint, the notion of a "single point" of surface, with its single color, is an abstraction. In the same way that region-based theories of space develop intuitive models outside of the point-set paradigm, we can also explore ways to model the association of spatial regions (in particular, regions of the manifold surface of extended objects) with features, like coloration, which does not assume from the outset the notion of *either* a "point" of space, *or* a point of (say) color. Instead of coloration being modelled as a point-wise mapping of location to color, we can consider a region-based product of the two spaces (color and surface-manifold), whose basic units are extended surface patches which take on a range (however restricted) of different color hues. As with Mereotopology, merely creating an alternative mathematical perspective for conceiving space (or, as here, spatial extension in conjunction with features like coloration) does not guarantee that the new model

15

(Mereotopological instead of point-set conceptions of manifolds, for example) is automatically more useful for real-world cognitive theories. But the exercise of exploring these quasi-mathematical models can sharpen intuitions, and serve as a symbolic reminder of the cognitive/perceptual limitations of the intuitions behind the models they replace — such as the notion of a single, infinitely fine-grained perceptual location.

In the context of a theory of concepts, these considerations have two corrolaries: first, that we need to distinguish fine-grained concepts (like a single RGB color point) from coarser ones (like *red*); and, second, we need to identify concepts whose instantiation depends on a mixture of finer and coarser-grained concepts. This distinction does not always apply, even among tokens of a single concept-type. An author may want some text in a manual to appear as red, and provide code for a specific RGB to be the foreground color for red text in that document: in other words, that fine-grained color-point expresses the concept "red *in this context* (*document*)". Any color point can potentially be its own concept (aside from the purely indexical concept of *being this particular shade of color*) — a concept introduced by some kind of code, or a mental, gestural, or cognitive designative act. Separately, however, when we say or perceive that an apple is red, we mean that there is a range of finer-grained colors which distribute perceptibly over the apple's surface. These finer-grained hues may or may not be cognized as distinct color-concepts within the broader concept-identification of the apple as red. We may passively notice some degree of color-variation without "conceptualizing" this pattern, in the sense of trying to match its details to some concepts of color or shape; conversely, we might actively try to reason about some perceived color variation through the means of a conceptual frame (for example, questioning whether a darker patch on an apple represents a place where the apple is bruised — so, less desirable to eat).

The perceptually-noticed but not conceptually-entertained color-variations may be an example of what some writers call "nonconceptual content". Careful, though, because some of this content may then, in an act of attentional refocus, become conceptual after all (first I passively notice the dark patch on the apple; then I actively attend to it). Also, there are different degrees of "passive" apprehending. I may be experientially aware of color-variation but not particularly interested in it, so it has perceptual but not cognitive presence in my thoughts; or I may not notice this variation at all, as when I first look rather attentively at an apple, then turn attention elsewhere, then look back and notice the apple less centrally — with enough detail to identify it as "that apple" but with phenomenal awareness of only its general red color and applish shape. If we want to incorporate notions of "nonceptual" content we need to ask whether or not this only covers content which is *never* conceptual. This maybe amounts to deciding whether "nonceptual" is a type- or token-modifier. Perhaps some *token* of red-awareness is (passive and so) nonconceptual, or it may be that only certain content *types* are nonceptual (perhaps because they

are matters of external grounding and not actually within a space of concepts, like the imagined distinction between H20 and waterlike XYZ). I will not consider this question here, but I will say that the "nonceptual" is if nothing else not merely tangential to a theory of concepts.

My larger point, however, is that a concept-instantiation like the apple being red is a relatively coarse-grained pairing of a concept and a bearer, and correlates with a finer-grained spectrum of variation and extension, involving both a range of color hues and the spatial continuity of the object's surface. We can also identify a more general phenomenon of concept-instantiations being coarse-grained summaries of a constellation of finer-grained details or observations. For example, there is a strictly binary sense in which Obama instantiates the concept Democrat. Not to rule out his ability switch to (or found) another party, or that the concept *Democrat* cannot also be used in less binary fasion, as when we consider not a person's party affiliation but their voting record; but there is certainly a sense in which the concept *Democrat*, as commonly entertained viz-a-viz politicians, is a binary fact of a person's either being in the party or not. People disagree over whether Obama is a "liberal" or "progressive", which are concepts without a fixed confirmatory grounding, like a political party. Here the instantiation is more nuanced, and we need to cobble together confirming examples, and qualify or minimizing incompatible ones (like Obama administration policies which anger or rebut progressives). Not that Obama is "really" either a progressive or not, and that we are trying to guess the truth; the point is rather that the concept of "progressive" is internally constructed so that its instantiation, in most cases, is a matter of general tendencies whose generality exists by virtue of the accrual of particular facts, not by a single factive "truthmaker" for the concept-tokenization, like Obama's winning the election single-handedly ensuring his bearing the concept of US President.

The tokenization nuances need not be present in all contexts. If there is a red apple and a green apple on the table, and I ask you for the red apple, then the concept *red* in this case has a more binary relation to its bearer, intended as a distinguishing feature relative to the other object's green. Similarly, someone can be generally regarded as a "great *Progressive* leader", adopting the label "progressive" self-consciously and persuasively, so everyone (regardless of their political positions) accepts the relation of the concept to the person as a given. I would suggest, however, that these are "binary" variations on concepts which, in their typical roles, inhere in more nuanced, multi-granular ways.

I will adopt the term "multigranular" to express concepts and/or concept-instantiations which can exhibit this kind of range of detail, depending on a scale of observation: say, identifying an apple as generically red or attending to the specific specturm of color-hue across its surface. I will also use the term "trope" to refer to a particular concept-instantiation (adopting language some-

17

times used for *properties*): a pairing of a concept itself (sometimes called a concept *type*, for example in ConceptuaL Graph Semantics) with a concept *token*. A "multigranular trope" then suggests a concept (-type) which by nature belongs to tropes in an extended, variable way, in some fasion. Cognizing such a trope therefore involves some process of perceptual or judgmental synthesis. The nature of this synthesis can vary widely from case to case: it may unfold over an extended period of time (like judging Obama to be a progressive), or during a temporally extended but unified perceptual episode (like looking at an object from different sides), or it may be a sensory synthesis of perceptual content available to be apprehended at a single moment in time, but perceptually extended in space. A multigranular trope can be apprehended at different levels of granularity, so it is amenable to different forms of summarizing. We can identify a kind of *contextual* or *relational* precis in which fine-grained tokenization details become insignifcant in virtue of contrastive effects from other concepts: red compared to green (as types of apples), progressive compared to conservative, etc. These "contrastive" structures belong both to conceptual frames and to particular contexts: we can speak of red and green as types of apples, and of *the* red and green apples on the table.

Such contrasts allow for the summarization of tropes either relative to conceptual domains (like US politics) or to a particular context of cognition and perception (like my dining-room table). But a simplification of conceptual granularity can also occur in conjunction with the distinction between active and passive perception. The things and surroundings I see out of the corner of my eye are experienced in less detail, with my attention both to featural (e.g. color) contrast and to featural disribution less precise. When I see the apple *outside* of my line of vision, for example, I notice the precise color and its contrast to other colors in less detail (compare a situation where I select an apple from a bowl of fruit because its color matches a tablecloth); I also attend less to how its color may vary surface-wise. This is another flaw in a "bitmap image" mathematicization of the apple's shape and color, since actually observed color points and regions depend not only on color values and locations, but on how effects of attention can vary the degree of detail and contrast perceived.

We can theorize attention as inducing "convolution" dimensions on the underlying dimensions of color and (surface) location. In this kind of example, the summarizing effects do not simply go outside the realm of perceptual extensionality entirely, as when (over the phone, say), I ask you to pack the red (and not the green) apple for my lunch; there I have no current perceptual comportment to the apple where fine-grained featural are available to me at all, and employ the red-concept just in its contrastive role. But, out of the corner of my eye, I still see some extended featuration, some interplay of spatial extension and perceptual quality; the difference is that my attention to the details of this interplay is muted, so my perception of these details less crisp, than when I actively attend to the apple as my perceptual focus.

18

For a similar example, suppose I walk down an avenue and notice the places around me: I can observe them with varying degrees of conceptual detail. I may observe just buildings, or stores, or specific kinds of stores (a restuarant, a market, etc.), or I may uniquely identify the establishment (if I have eaten in the restuarant, shopped in the store, know their names, etc.). This can depend on how well I know the neighborhood, but also on how carefully I observe my surroundings. If I am daydreaming about distant climes, I could be walking down the block where I live and yet not consciously notice particular places and establishments. Conversely, if I am visiting a foreign city I may quite attentively study the sights along way, curious about everyday details which locals might take for granted. Conceptual identifications, like recognizing a large structure as a *building*, recognizing a building (or its ground floor) as a *store*, recognizing a store as a *market*, etc., is an intrinsic part of my forming a practical map of my surroundings, but I can do so with varying degrees of generality. In other words, I can actively notice tropes whose concept-types are more or less inclusive: I can identify just a building, or a store, or a market, etc.

So, too, I form a basic perceptual map of my surroundings, but with varying degrees of perceptual detail. Walking aside a park, I can generically notice the more or less continuous green ond one side of the street (in contrast to the road's dark grey on my other side), or I can notice more attentively the various trees, bushes, and patches of grass. Both perceptual and sortal concepts (like green on the one hand, and like buildings or stores on the other) belong to the "ambient space" of my surroundings. My immediate proximity is structured by a spatially and temorally unfolding constellation of concept tokenizations. We can call this realm a "frame", in the sense that it represents a structured and interrelated collection of concepts (or concept-tokens, in this part of the theory). This kind of frame, though, is one where concept (tokens) are linked by virtue of spatial proximity, not by a shared domain (like politics). Moreover, the concept-instantiations are multigranular, so they can belong to perceptual episodes where I notice concepts as inhering in spatially extended (and spatially surrounding), phenomenally rich ways. So these kinds of concept *token* frames, which tend to be demarcated by spatial locale and to be perceptually fine-grained (or, more exactly, to exhibit varying degrees of perceptual granularity), need to be distinguished from the concept *type* frames featured by Lakoff or Fauconnier (and their co-authors).

To explore this theoretical contrast, we can consider conceptual tropes as part of an "interlocking" system of concentric domains where concepts are relevant to our moment-to-moment attentive states at different scales. We have at most moments a point of perceptual focus (at least if we exclude episodes of daydreaming, contemplating some future or abstract or distant domain, etc.), where we actively attend to specific perceptual qualities of specific objects or parts (or potentially aggrates) of objects. Every perception of these attentional foci, however, also involves a more passive perception of the objects and space

immediately around them and (perhaps slightly futher away) things seen "out of the corner" of our eyes, in the distance, and so forth. Actually, in day-to-day life it may be that occasions where we are attending to abstract or distant matters may be just as common as our perceptually focussing on things before us (consider the difference between planning where to walk when we get to our subway stop, and peering out the trains' windows to identify the stop where we're are). However, the two-layer distinction of an active perceptual focus within a larger, more passive perceptual frame, carries over to more "daydream-like" scenarios as well, except that here there is only the more passive perceptual frame by which I keep minimal track of my surroundings, while my mind "wanders".

Beyond the contents which, in a given moment, I do (however passively) perceive, there is then a larger collection of content linked to the present moment in a given perceptual episode: the side of an object I have just seen but do not currently see, or my expectation to see the door to my apartment as I turn toward it (anticipating how it should look, lest something unexpected demand my attention; otherwise I can just go through the motions involved in opening and leaving via the door without paying it much interest). In a given perceptual episode, contents from the three "layers" of active, passive, and nonperceived (but retained/protained) content, tend to weave in and out of focus and awarenss; the actively perceived is in the next moment passively apprehended and then simply retained, or the "protained" anticipated content is actively perceived and then, for example if nothing amiss is observed, quickly reverts to passive perception. So these layers are sifted, shuffled, and rearranged rather continuously in an unfolding, dynamic perceptual-cognitive process.

Having proposed three "layers" of (almost) immediate perception, I will also propose three more general layers. Individual perceptual episodes are furthermore "framed" by a mental orientation of the larger surroundings in which one's perceptible surroundings (or those available to be perceptible with a straightforward modification in positioning, like turning around or looking around) are situated. This is the kind of larger context suggested by phrases like "the fence (which) runs down to the river", or my knowledge of how the particular street I am walking down fits into the grid of blocks in my neighborhood. So here is a contextual layer as a bridge between immediate percepual environments and the larger world: its important features include proximate entities (like the fence or the street, continuing the examples I just mentioned) which then extend out beyond the (spatial or thematic) horizon. If we consider this "bridge"-like context as a "fourth layer", we can then identify as a "fifth" layer the larger situations and real-world space in which my perceptions and actions are involved. I am walking down the street to meet someone, or riding a train to work or to a lecture, or the fence divides two persons' properties. So at this layer — which we can call "situational", in the sense of situations as states of affairs in general, not just the immediate locale where I am situated — we can introduce concepts and pragmatics relevant to social situations, roles, environments, and

interpersonal relationships. These are the "natural" environments which surround most people in their day-to-day lives, living and obtaining the necessities of life through their participation in collective norms and processes. Finally, even more general than this societal context, there is the system of moral and political values which govern such structures. Social reality is not fixed, like "nature" in the wilderness, where humans can onlt adapt to Earth's patterns and dangers. People create, dispute, and implement moral and political codes such that existing social structures are evaluated and legitimized.

Here then we have (for purposes of schematic presentation) six concentric "layers" of conceptual context, which are progressively more "expansive" relative to the locale of a single perceptual episode. These are different kinds of contexts in which conceptual frames may come to bear on concept-recognition, and in which tropes of concept tokenization are manifest, in different ways, and according to different ontologies of concept-substrata relationships. Different theories of concepts may be particularly suited to different of these layers. The emphasis on "geometric" concept spaces in ~Gardenfors, for example, where concepts are subject to something like continuous variation to establish their boundaries, is well-suited to the kinds of concepts applied at the immediate layer of sensory perception. The point of concepts in this context is not just to classify or designate objects, but to form a detailed (as needed) mental image of objects' shape, spatial extension and geometry, and the layout of my immediate surroundings, for purposes of physical movement and operations. The fine-grained variability of these concepts can therefore be matched to the spatial extension of surrounding and attended objects and surfaces. By contrast, the more "structural" concept-frames emphasized by Lakoff are well-suited to situational reasoning, as we make sense of our day-to-day lives in more holistic, temporally extended ways. In this case, it is useful to be able to create rather coarse-grained precis of conceptual tropes and relations, often structurally mirroring the language acts which can communicate them: "he works at the school"; "they have two children"; "he's a Democratic Senator", etc.

Considering examples of "Conceptual Blending" which emerge from research in this area, in turn, we can plausibly argue that this branch of a theory of concepts is well-suited the interactions between the more situational, holistic contexts, and the more perceptually immediate ones. Taking the example of children playing with imaginary light-sabers, a perceptually immediate content (some handle which serves a "vehicle" for the "perceptual metaphor", to use XXX's language), is then overlayed with concepts drawn from a more distant (at once inter-gallactic and purely fictional) context. Or, a houseboat takes perceptually available details — seeing a vessel floating in the water, and seeing its well-appointed, house-like amenities — but generalizes from these observations according to warrants which are contextually sensible only by mixing conceptual frames; in other words, synthsizing different (and perhaps otherwise hard to recognize) perceptions with an account of a houseboat as a place which can

both travel through water and can serve as a place of residence. The schema of "boat" and "house" have some parts which belong to, structure, and can best be activated within perceptual episodes, (seeing a boat in the water; walking into rooms of a house). But via *blending* we make sense of such perceptions via stragic combinations of multiple (and not wholly perceptual) concept frames.

This range in contextual "expansiveness" can help to explain how different particular theories can share the same macro-theoretic domain, while remining somewhat distinct (at both the level of ideas and also the intertextual level of citations, references, etc.). Investigating my proposed "six layers", or something similar, can then provide an axis for unifying (at least) the theories in the area of cognitive linguistics which Goguen considers. However, I would also like to address questions I have raised here concerning the relation of these cognitive-linguistic approaches to (Analytic) Phenomenology, and of the relation between conceptual activity and consciousness, introspection, and embodiment.

3   Concepts and Consciousness

We use concepts, at the more immediate perceptual level, to create mental accounts of our surroundings. This involes straightforward predication (like *this is an apple*), but also attunement to the spatial and featural variability of concept-tokenization. The point of immediate perception is not just to represent atomic (or aggregates of atomic) facts, like the apple being red, but to form (as needed) detailed representations of objects' "geometry", their precise spatial form, because I may need to grasp them, and otherwise physically interact with them. Similarly, I need to cognize the geometry of spaces which I move through. The same perceptual qualities which lead to identifying concepts like red, (smooth, cold, wet, etc.), also allow me to form an account of the geomtery of the world around me, and the conditions in the local ambient space as these may be of concern (the cold air suggesting my donning a jacket, the wind cautioning care of flying debris, etc.). Becauase my comportment to *these kinds* of concept-tokenizations involves this dimension of perceptual extensionality and ambience, a well-rounded investigation of this aspect of concepts seems to demand, if not necessarily an full endoresement of Phenomenological philosophy, then at least a phenomenologist's sensitivity to experiential gradations.

It is certainly true that many of the cognitive structures mobilized in my first conceiving and then acting within my ambient surroundings are preconscious. As I walk across a room or down the street, or reach toward an object, there are evidently many subtle calculations which my preconscious mind performs, allowing me to direct interest away from brute physical actions and toward their larger targets and purpose. But the media through which my mental scheme of

ambient geometry is formed, are often experientially salient: even if I am only passively aware of the nuances of coloration across the surface of the apple, this pattern nevertheless provides the cues which guide my preconscious appraisal of the apple's (precise) shape, guiding the (precise) positioning of my fingers as I grasp it. I may have no introspective awarenss of how the visual impressions correlate to the spatial orientation of my fingers, but I am consciously aware (even if only passively) of the visual data which are thus correlated, and of the tactile sensation of apple firmly in my grasp, confirming that my preconscious "calculations" were correct.

The fact that I can *even passively* apprehend fine-grained gradations in concept tokenization *allows me* to (merely) preconsciously engage in motor acts like grasping the apple, while my active attention is focussed elsewhere. We can interpret this as a preconscious cognitive domain which does not need conscious "guidance" to operate, but we can also interpet this same kind of scenario as a reflection on the richness of consciousness to present a variegated spectrum of impressions even within passively apprehended contents. The fact that sensory consciousness is always consciousness of *spatially extended* perceptual qualities means that an act of "perceptual synthesis" is always involved in perceptual episodes, whether active or passive. Even within *active* perception, this synthesis is not simply active attention to a whole, relegating perception of smaller parts to passivity. For example, as I direct attention to the apple, I position my visual field to frame its shape and color; even if I *actively* observe the gradations in coloration across its surface, I also actively recognize these as details within the general fact of the apple's overall redness. My (active) perception of the apple as tokenizing *red* is also (active) perception of the internal structuration of this tokenization, of the fine-grained articulation of color across its surface.

This situation would be different if I were apprehending, say, not a single apple but a bowl of fruit. Here color variation would suggest object boundaries, and not merely one single object's internal featural structuration. The contrast here is a contrast between forms of mereological organization within apprehended contents, and in particular the contrast between aggregation and internal structuration. We use fluctuations in apparent perceptual qualities as evidence for such variations in mereological form. This cognitive/perceptual faculty cuts across both active and passive awareness: I can be actively aware both of a featural internal structuration (of coloration, for example) and of the perceptual synthesis of (perhaps partially) distinct colors regions into a whole like, say, the *visible surface* of this apple. Here the synthesis (from which "the visible surface" arises as a distinct mental item) coexists with active recognition of an internal structure (various perceptual parts and components of the whole visible surface). Conversely, I can be passively aware of the fact that the component perceptual qualities which I passively apprehend in my peripheral vision (like the color of distinct cars, for example), unify into wholes or aggregates which I passively note, even while I do not attend to them (like recognizing a

line of cars as those parked by the curb).

Moreover, the domain of perceptual synthesis goes beyond these nereologi-cal schema among perceptual qualities. The kind of synthesis highlighted in the last paragraph is mostly a *spatial* synthesis, but there is also a temporal syn-thesis within a single perceptual episode. Perceptual judgments are not atomic mental events, but involve some process of temporal unification, however brief. The different layers of immediate perception (the "inner three" of the layers I suggested earlier) can mix and interchange their contents in an unfolding pro-cess — so that I can get a sense of an object's coloration by looking at it from different angles, for example. Here these different perceptual layers frame and complement each other: it is by virtue of identifying the apple's coloration that I perceive its shape, but my identification of this shape (and therefore of the ap-ple's separation from its surroundings) helps sharpen my awarenss of the apple's color as it contrasts from the colors of objects around (or visible behind) it. The apple's color saturates its surface, but the surface frames and provides a medium for the color. The conceptual identification of the object as an apple helps to consolidate the apparent perceptual shape (this shape being a reasonable one for apples), but perceiving the shape helps to identify the object's appleness in the first place. Different conceptual, perceptual, and senaory layers frame and corroborate one another. It is misleading to single out one layer and study the play of concepts restricted to that layer; or to consider the relationship between these layers as a simple reasoning progression, like the proof of a mathemat-ical theorem: being aware of the apple's red color, say, and then from that color perceiving the shape, and from that shape conceptualizing the appleness. The different layers of sensation, perception, and conceptualization are instead looped in a dynamic, feedback-driven entangelement.

Considering the complex and multifaceted forms of synthesis involved in my attributing concepts both to discrete objects and to my overall ambient sur-roundings, it seems that a theory of concepts operating on this level needs some form of phenomenological account of perceptual synthesis. Phenomenology is committed to a rigorous and theoretically dense description of the mereological and episodic structures of perceptual awareness — meaning "dense" in con-trast to accounts which are conceptually sparse, failing to theorize a sufficiently expansive set of notions and parameters, to capture all details of mereologi-cal organization and temporal organization, which can characterize perceptual episodes and their contents. Nevertheless, it is also true that many of the actual cognitive structures mobilized in these episodes are *not* conscious, nor subject to introspective analysis, and are engaged in the context of physical, embod-ied interaction with our surroundings, where many of our perceptual judgments are instinctive and intuitive. The analysis of motor activity may fall outside the boundaries of phenomenology narrowly understood as an analysis of "phe-nomenal feels" or an introspection of attentional focus, but it certainly belongs to the larger phenomenological project of analyzing perceptual synthesis and

intentionality.

Indeed, the phenomenological notion of "motor intentionality" — first considered in detail by Merleau-Ponty — points beyond both phenomenal qualities and introspection, as phenomenological themes. I cannot introspect the full explanations of my motor activity, once I have committed to a particular "motor directedness" toward some action, like opening a door or eating the apple. On the other hand, the fact that I cannot consciously explain all of my physical motions, does not mean that I cannot engage in some partial introspection of my actions and intentions. We are not at all surprised when we both find ourselves having done something clumsy and also are able to reconstruct, to some approximation, what in fact happened. The billiard player who missed an easy shot, may say that he was trying to put backspin on the cue ball when he heard a loud noise at another table — this kind of report is entirely unsurprising, yet it amounts to an introspection of motor intentionality, albeit one which acknowledges that our motor operations are (sometimes frustratingly) opaque to conscious control and observation. We cannot direct our motor engagements *as they happen*, but we can observe and reflect on their results, engaging a dynamic process where a pitcher in baseball can "make adjustments" to be more accurate on a given night, a pianist learn a difficuly arpeggio, etc. So while consciousnsess is not empowered with a unilateral "executive control" over our precise physical actions, nevertheless these actions occur within consciously experienced environments, serve consciously desired ends, and their results can be subject to conscious evaluation and reconstruction.

In addition my "embodied" physical interactions being to some measure (but, as I have just maintained, not entirely) beyond conscious control and awareness, so too (as Lakoff stresses) the role of conceptual networks in my identifying surrounding things and situations is also largely preconscious. Situational framing predisposes my association of perceptual details to conceptual recognition. I do not see an apple-like shape and select "apple" from an unlimited repository of potential concepts. Instead, the present circumstances provide a frame which makes the activation of particular concepts more or less likely: I expect to see an apple on a dining-room table, or in a fruit-market basket; but not amongst the gears of a machine, for example, where I would be more disposed to regard a red apple-like shape as some sort of metallic container. Our appraisal of our surroundings constructs an inventory of "expected" or at least "plausible" tokenizations, and we accept tropes which seem to violate these expectations only if we exhaust other alternatives. We expect to see a pencil on a desk, and not floating in a fish tank, so if we *think* we see a pencil in a fish tank we look very carefully to see if it may instead be some kind of fish; but when we see a pencil on a desk, we do not feel the need to disprove the possibility of its instead being a fish. Moreover, when we are confronted with incongruous tropes we instinctively formulate possible explanations — if we become convinced that it really is a pencil in the acquarium, we reason that someone must

have dropped it there (by accident or on purpose?).

These examples — pencils don't normally appear in fish tanks, and apples do often show up on dinner tables — describe fairly large-scale and obvious conceptions of situational context, but on a more intricate scale we seem to make similar contextual judgments more narrowly, based on more fine-grained appraisals of the *truly immediate* situation. There are expectations of what we should sense and observe from moment to moment in an unfolding context, and minor surprises which are quickly absorbed and reconceptualized. Much of this cognitive formation of expectations, and assimilation of incongruities, happens at a preconscious level. But "preconscious" here means that my attention is free to focus elsewhere, not that these kinds of cognitive speculations cannot happen consciously (and sometimes have to become fully conscious, when something truly puzzling catches my attention). Moreover, the cognitive deployment of conceptual frames in the course of categorizing surrounding objects, like the precise motor actions implementing my physical involvement with things around me, are preconscious cognitive processes within the overall conscious reality of my active, purposeful, vivid engagement with the world, as a self-aware and enduring personal identity.

On the other hand, insofar as a given perceptual and cognitive act or judgment — however consciously vivid — depends upon a largely preconscious conceptual (and motor-intentional) framing, we cannot "lift" the single act out of its conceptual context, and try to study the conscious experience *sui generis*. As soon as I perceive the applish shape and color I instinctively apprehend that I am seeing an apple, and this recognition is attached to the visual qualities as I see them subsequently and more attentively. I cannot reconstruct this perceptual episode if I introspect on just the (phenomenal feel of the) color, or shape, or even on the cognitive process of forming a belief about the appleness. The actual episode fuses these components (of color, shape, and belief) into a conscious whole. While I can introspect on the components in isolation, and even on how they are consciously interrelated, I cannot introspectively recount the preconscious processes by which the color and shape evidence triggers the "apple" concept; I am only conscious of the result of this triggering, my instinctive annotation of the active perception with the conceptualization *apple*. Moreover, while I can introspeectively identify the red color and vaguely heart-like, symmetric shape as key parts in this instinctive judgment, surely there are further framing observations (like seeing the object in question on a dinner table) which I cannot reconstruct as readily, and even if I do introspect on some of these (as I just did in identifying the dinner table as a context) these are in turn framed by more contexts (the dinner table is in someone's home, say, and not in a museum). Any introspectible conscious content, whether perceptual or epistemic, is suspended in a web of preconscious reasonings and framings.

But this failure of introspection does not mean that introspection has no merit; obviously introspective analyses of mental states differ from and distort the mental states themselves. I have repeatedly used the example of (grasping and then) eating an apple, but I have not eaten any apples, and there is no way for my hypothetical mental states during the introspection to be the same as those of real apple-eating. Moreover, there is no way for me to go eat and apple just out of a spirit of philosophical experimentation, and see if the episode fits with my hypothetical characterization; this introspective process would distort the experience itself. Transcendental medititation may cultivate mental states in which the introspection and the states themselves coincide, but transcendental medititation is not eating an apple. So introspection surely distorts the (hypothetical) experiences inspected. But that is precisely the point: this distorting calls attention to strutural properties of perceptual and/or reasoning episodes which are not experientially distinct in the original experience, because in the episodes themselves we reason *though* these structures, not *about* them. Any cognitive/perceptual act, in particular, involves a complex synthesis across spatial and temporal extension, contextual frames and framing — including both situational reasoning and "background knowledge", e.g., that apples are edible — and reasoning through conscious modalities like affective presence, conscious volition, etc., that help confirm my experiences as attuned to actual external things, that I am actively and purposefully engaged with them, that they fit within my larger personal history. As I see it, the proper role of Phenomenology — and of introspection, when appropriate — is to build a model of all the parameters of these syntheses; even indeed to build an "Ontology" of perceptual synthesis, in the modern Computational sense. Phenomenologists can then extend analysis of particular perceptual episodes in the direction of intersubjectivity, embodiment, etc., going beyond the single episode to extended personal existence, social communities, and so forth, but the kernel of these further topics are also in individual perceptual episodes. We orient our sense of perceptual perspective by considering actual or hypothetical other perceivers, for example; this introduces interpersonal themes into individuals' experience, but also introduces individual experience as a site for exploring intersubjectivity. Our personal existence provides one source of conceptual framing of the volitions animating the engagements contextualizing a perception, just as our sense of social collective provides conceptual frames which contextualize parameters of classification. So this introduces exitential themes into perception, but it also makes perception a vehicle of exitential analysis.

We can say that cognitive science allows us to develop formal models of perceptual syntheses, and that cognitive linguistics shows how various structural organizations — either identified through or implemented in these syntheses — provide semantic content to categories and prepositions (the theory of prepositions being a foundation of Lakoff's work, for example, showing how spatial reasoning lies behind complex patterns of organization within some semantic frames; by way of illustration, contrast the phrases *paint on the wall* and *paint*

over the wall). Phenomenology, in turn, helps to clarify the multi-faceted parameters of perceptual synthesis in real-life episodes, with a complex superposition of personal, affective, perceptual, and classificatory dimensions, applied to a similarly thick combination of spatially extended fine-grained perceptual concept tokenizations, unfolding perceptual temporality, situational contexts, conceptual frames, and self-consciousness. Cognitive science explores the formal and (potentially) neurological mechanisms of synthesis, cognitive linguistics explores the semantic trace of syntheses, and Phenomenology tries to create a ("thick") philosophical vocabulary of what is synthesized. At least, this is a plausible account of how these methodologies are or can be interrelated and corroborate. This implicitly "macro-theoretic" model, however, is still not a "Unified Concept Theory for the Human Sciences", because I have focussed on *perceptual* synthesis; and have approached *concepts* themselves only, for the most part, on how they bear on perception, insofar both as perceptual qualities have their own associated concepts, and as categorizations like "this is an apple" intrinsically "annotate" perceptual experience. Certainly social, interpersonal, and conceptual-frame dimensions are relevant to perceptual processes through their contextualizing roles. But I do not believe that a "unified theory" of concepts can relegate social and cultural factors to (only being) *frames* which contextualize individual perceptual acts. This they are, but not all they are. So, I will conclude with thoughts about how to give culture and society a larger theoretical role.

4   Concepts in Cultures

Most of the concepts involved in our daily lives have social, economic, and often political or community dimensions — an apple is a fruit, but also one bought and sold at certain kinds of stores, grown somewhere by someone, maybe labelled organic, "fair trade", and so forth, with nutritional and health value, etc. All of these socially salient contexts provide "background knowledge" or "horizons", in the words of David Woodruff Smith and Robert MacIntyre. The details of how these societal factors can come to bear on the cognitive role of particular concepts, like "apple", may be hard to establish with either the methodologies of cognitive science or of phenomenology. Each of these fields can shed some light on *how* social context operates conceptually, but not on real-world details. A phenomenologist can consider hypothetical apple-seeing episodes, and a cognitive scientist can gather data, like asking people what other ideas come to mind when hearing the word "apple". But these methods, different as they are, share the property of making tractable only a small set of the full contextual expanse which connects even a single concept and episode (like apple and an apple-perception) to larger social reality.

Similarly, the thematics of embodiment and physical activity go beyond

both phenomenology and cognitive science: motor actions by nature have to be largely preconscious, freeing active attention for the larger goals which a given action serves. Meanwhile, even while we can reconstruct some of the interplay between action and perception in fields like robotics, programming mobile computers to maneuver across terrain or even play sports, robots' capabilities hardly resemble the grace and precision of human (or animal) bodies. Perhaps people are so much more successful in enacting "motor intentionality" precisely because our conscious experience, able to (passively if necessary) perceive fine gradations in perceptual qualities — and correlatively of shape and ambient geometry — even in background and peripheral perceptual regions, yields a more vivid and productive map of our surroundings. The federation of passive perception and preconscious motor reasoning frees our active attention to imbue surrounding situations with personal and collective meaning, so we can discuss, plan, and implement complex social realities. So far, then, phenomenology can point the way toward broader social topics.

Indeed, careful analysis of passive and peripheral perception is a major part of the phenomenological repertoire. A case can be made that active, engrossed attention is actually easier to simulate within non-conscious systems, like a modern ATM machine which can algorithmically infer the dollar amount on a check. Reconstructing visual faculties, like facial recognition, is evidently easier than reconstructing our overall sense of surrounding reality, beyond and framing whatever has our immediate attention. The phenomenology of consciousness is phenomenology of more active and more passive awareness as an integrated whole. So the phenomenological description and investigation of the *absence* of focal attention, as well as its presence, is an important part of exploring how our integrated construal of surrounding reality ("the world in its worlding") can inbue this reality with social salience. Nevertheless, how preconscious cognition acts within the passive regions of awareness is a matter of structural analysis, proper more to cognitive science than to phenomenology. On this account, the two methods complement, rather than contradict, one another. Their confederation is an integrative analysis of how both conscious and preconscious, active and passive, focal and peripheral, structures and qualia, blend into our episodic interaction with (and "being in") the world. So in this sense it is phenomenology and cognitive science together which invoke broader themes.

But "integration" goes beyond just perceptual awareness and situational reasoning. Conceptual frames contextualize perception, merging perceptual and cognitive activity; but integrated within this fusion are further details of purpose, desires, intersubjectivity, and so forth: emotional and moral categories provide their own contexts and frames to both experiential and situational consciousness. Phenomenology and cognitive science can jointly build a scaffold for introducing these realms, but their actual investigation invites other paradigms.

Consider how critics or defenders of the US "War on Terror" may appeal to provocative images — of victims of terrorist attacks, for example, or alternatively of US drone strikes. The mental paths intended by these strategies may not always be followed, but they at least become possible: seeing innocent children killed by drones, say, can lend force to the moral condemnation of the drone policy. For the "addressee" of these appeals, the emotional resonance adds an affective dimension to the integration of perceptual and conceptual content. How or whether this affect is "accepted" can depend on our prior commitments, but its place in the integrated whole marks the experience as one of moral, and not only situational, reasoning. We do more than just (via conceptual frames) identify pictures we are seeing as taken in Pakistan, showing actions by the US government, and so forth. We do make those cognitive judgments, but the conscious episodes where that occurs also weave in the emotional cadence of our reactions, and this provides a moral and emotional frame alongside the conceptual context, our "background knowledge" of war, foreign policy, etc.

As Lakoff (for example) emphasizes, perceptual experience is suspended within (larely preconscious) conceptual frames, which provide situational context; by the above analysis, these frames can then be extended with emotional and affective dimensions, which then also provide moral and normative context. Our empathic response to seeing drone-strike victims is an intrinsic part of the perceptual episode; it has the same kind of instinctive immediacy as the concept "apple", in conjunction with perceiving an applish shape and color. But while our emotional response may be visceral, and surely belongs to a direct perceptual awareness, as we integrate this emotional significance into our situational reasoning, we draw on wide-ranging conceptual themes, of war, politics, policies, and their (contested) legitimacy. So integration between preconscious and conscious, in this example, relates subjectively present emotional states to expansive concept frames, the rules for whose application in perceptual judgment (the basic identifcation of places and events), and then situational and moral/normative judgment (such as going beyond identifying a scene as in Pakistan, to noting Paksitan as a US ally but base for terrorist groups, the intricacies of US-Pakistani relations, etc.), are partly preconscious.

Lakoff also holds that perceptual experience is suspended within (largely preconscious) embodied interactions, and these too can take on emotional and affective dimensions. There is a thread of vivid (if perhaps not truly systematic) cognitive themes, in semiotic or cultural analysis of space, embodiment, signifying systems, etc. A good example of this trend is the article "Modernity and the Spaces of Femininity", by Griselda Pollock, which argues that a gender-influenced experience of space is evoked by how spatial relations are organized and depicted in modern (viz., 20th-century) women's painting. Our sexual and gender identities have an immediacy which leaves a trace even in our basic perception and experience of space, and we can sometimes observe personalities in comportments to the space around. Pollock argues that similar expressions can

be found in how spatial settings are shown in relation to the people situated within them; analyzing both "concepts" associated with places (e.g., whether a depicted space is outdoors or indoors, public or private, thereby mobilizing frames related to concepts like domesticity, family, public visibility, etc.), and also the spatial organization of locales, their suitability for different kinds of movement and activity, their specific structure as spatial locations. Pollock's analysis can therefore be approached as a kind of larger-scale analog to work like Terry Regier's influential analysis of spatial relations as they are encoded in prepositional semantics, defining a "semantic frame" of spatial organization from which prepositional usages are then "selected" (or, more precisely, form a matrix which strutures the range of cases where different prepositions are used).

Even the succinct example I mentioned earlier — paint *on* or *over* the wall — can be adapted to capture broader cultural themes: consider, for example, that in many societies in our time it is controversial whether women may be allowed (or forced) to wear a veil *over* their face; but people put cream or makeup *on* their face. "Over" connotes hiddenness, withdrawal, secrecy; whereas "on" connotes ornamentation, display, invitation, openness. I do not mean to suggest that we can do alot of serious cultural analysis with these kinds of semantic games; my point is rather that theories of frames and contexts, which in a strictly cognitive dimension are concerned with spaces and relations among *concepts*, can be developed also around more affective, emotional, and personal-identity themes. Spatial organization, for example, can reveal a cultural dynamic even at the scale of single lexical units (like "veil *over*" compared to "makeup *on*"), but these topics come into focus more consistently at the scale of larger significatory units, like the spatial organization of paintings, as analyzed by Pollock.

I would like to point out that the interplay of preconscious and conscious — where Lakoff, for example, focuses analyses of conceptual frames and of embodiment, these involving non-introspectible cognitive operations which nevertheless (I have argued) take on their larger signficance in the integrated reality of a conscious mind — is also where analyses like Pollock's introduce social and cultural themes which extend conceptualization. Moral judgment can be structurally compared with situational reasoning, but its integrative synthesis includes affects of personal and empathic emotions, and its conceptual frames incorporate normative maxims of right and legitimicy. Embodied cognition integrates perceptual awareness with motor capabilities, but the social and cultural dimension of our experience of space integrates recurring patterns in how the spaces around us synergize or inhibit our personalities and goals: whether they are constraining, nurturing, threatening, expansive, and so forth. So the analysis of (preconscious) conceptual frames and motor intentionality, as contextualizing conscious states, presents a theory-structure through which different analyses, engaged with more societal and political structures, can also be systematically read — studied, in other words, in terms of the collected notions they theoretically deploy and how these are interrelated.

The identification of structural parallels between theories — both in terms of how notions are defined and of the network of their theorized relationships — does not guarantee that theories are sympatico, especially since a "theory" is part of a larger intellectual and institutional project. We can observe when pathbreaking scholars, whose work is significant for purely technical reasons, are also actively engaged in culture and society (as worlds, not as topics). It makes sense that researchers with multi-faceted interest will also have interests across the street from the campus: Lakoff works in embodiment, linguistics, philosophy, and cognition, but also in politics and advising. Barry Smith, for another example, has established expertise in Austrian and Central European philosophy, Phenomenology, and branches of computer science and knowledge engineering; but he has also been actively engaged in reconstructing an academic culture in Central European communities formerly under Soviet influence, an interest which embroiled him in a public dispute with Jacques Derrida, lamenting at one point the scholars who had been "scorched with the Derridean acid". I find this language unfortunate, especially becauase all too many people (women; let's be honest) literally have been "scorced with acid" (to be fair, these comments are decades old and preserved in an obscure corner of the Internet) — but they do speak to a level of commitment which is more than just technical. For a third example, there are many formations in Theresa Brennan's writings on perception and semiotics which should be thought-provoking for a cognitive linguist — but we should not read Brennan without having in our mind her political involvements, her plan for the "Public Intellectuals" program at Florida Atlantic University, and how everything tragically fell apart when she was killed in a hit-and-run auto accident the day after (so it is said) effectively finishing *The Transmission of Affect.*

The rise of modern "knowledge engineeering" — the Semantic Web and the development of an "applied Ontology" to model both specific knowledge-domains and general structures of knowledge and reasoning (including, but not solely, for computational analysis of texts and data) — this modern technology gives us new perspectives on how theories are organized; on the *cognitive structures* involved in reasoning through and about theoretical systems and writings. Frameworks like Conceptual Graph Semantics, developed to study systems of concepts, can also be applied to theories and academic paradigms themselves. This kind of meta-analysis focusses attention on how theoretical concepts are defined, how concept-types present a hierarchy of more or less generality (is the concept "emotion", for example, contained in the concept "affect"; or *awareness* inside *consciousness*, or *perception* inside *cognition*?) — and how theoretical systems propose relations between concepts, which may be relations between specific concept-instances or rather as general principles. These considerations are always part of theoretical reasoning, but modern Applied Ontology and Concept Mapping can sharpen our intuitions about the basic principles of theoretical reason, which can particularly helpful for human sciences, where there is no obvious "foundations theory" akin to Category Theory in mathematics, or

the Standard Model of Particle Physics, for the natural sciences.

Yet, to be sure, such structural "theory-analysis" can overlook the larger intellectual projects to which theories belong — how scholars interpret their relationships to one another and to their societies and institutions (academic or otherwise). So we face a question: part technological, part hermeneutic, partly an interpersonal matter among communities of scholars: how do we milk the affordances of modern (semantic, textual, discursive) technology while respecting the place of texts in personal, political amd institutional con-texts?

5   Final Commenta

I think every scholar has *some* "project" which goes beyond the technical details, and they instinctively recognize the boundaries and separations among the projects of others — being careful not to allow a purely "conceptual" interpretation of texts they read (or even choose not to read, for these kinds of reasons!) to distort what texts *mean* in their own project. But I believe this instinctive interpetive sensitivity, even if well intentioned, can lead scholars to underestimate how significantly theories often *do* migrate outside their original "project", and need to be read as such. For example, as a kind of case-study, a significant body of (say) American "humanities theory" make extensive use of French thinkers (Derrida, Foucault, Lacan, Deleuze, Guattari), but obviously from a context far removed from French politics, psychiatry, and academia. This is not just a matter of failing to grasp the issues and controversies which influenced why the text was written; it also affects reading the texts themselves.

Consider a student in a Film Studies department, where there is a tradition of Lacanian analysis, who is reading Lacan or Lacan-inspired writings in a different world — not just English in lieu of French, or the 2010s instead of the 1960s, but also a world of different technology, culture, politics, and historical conditions. Digital editing and realistic computer graphics are a given in modern film, for example, and this can certainly influence how someone today reads a word like "Representation", sensitive to algorithmic and technological dimensions of representing which simply did not exist when the *Ecrits* were écrit. Without consciously recognizing this historical context, it is certainly plausible that a hypothetical Film Studies afficionado has intuitions about a notion like "representation" which are similar to those of a contemporary Cognitive Scientist, for example, whose intuitions similarly reflect their shared contexts.

Suppose that student had enjoyed video games when a little younger, and has read reviews and evaluations of these games — reviews which assess games on both aesthetic and technical grounds. For that matter, he may be famil-

iar with social themes around the games, like whether they promote violence, and so receptive to the idea that Critical Film Theory of some type may have interesting applications in that domain. He may enjoy movies which make extensive use of game-like technology, and are reviewed and evaluated as such. This all forms part of the historical conditions surrounding what it means the be a Hollywood film in the 21st century. Even if another student does not care much about video games, she is also, despite this disinterest, similarly situated in a milieu where these conditions of the production of films implictly relate the movie world to technology, video games, Virtue Reality, the analysis of digital graphics with respect to their verissimilitude as well as aesthetic properties — and therefore to a domain of analysis which is literally structural and mathematical, directed implicitly or explicitly at computer code which manufactures representations. These hisotorical conditions create an inevitable space of overlap between theories of films and theories which relate cognitive and perceptual processes to mathematical, representational systems; in other words, ones more sympathetic to cognitive-scientific paradigms. So students interested in film mostly from aesthetic or socio-political viewpoints may nevertheless find more scientific/computational approaches informative or relevant. Even if cognitive scientific texts are not part of their serious reading, they are still living in conditions that can dispose their intuitions to overlap with those authors. This shared historicity can then balance the paradigmatic breaks between (say) cognitive science and (e.g. Lacanian) film theory, so that, within the writings and intuitions of our hypothetical students, the latter paradigm can evince a kind of "theory drift" — a morphism of concept structure and definition which makes recent work less hostile to cognitive science, say, regardless of former or suposed antagonism between the respective fields.

We should honestly admit, also, that "theory drift" is exasercbated by the sheer heremeneutic difficulty of writers like Derrida and Lacan. Even an intelligent and motivated reader can find many of their passages all but incomprehensible, and can do little more than approximate what the texts might mean by constructing a plausible system of concepts based on the words on the page. One can end up reading Derridean *differance*, say, as something like the terminological uncertainty which accompanies contested and widely used concepts, or read Lacan's "Symbolic Order" as something like societal norms and semantic structures, with language understood as manifesting and tending to preserve social structures. Readers parse difficult texts by inferring a conceptual atchitecture which seem to provide a plausible semantics for the texts' more opaque language, but also seems plausible to their own intuitions. The net result is "theory drift" or "interpretive morphism" (deliberately using a Category-theoretic term) where texts are reconstructed around the intuitions of the reader, intutions which may be influenced by different intellectual traditions, with different "projects" than the original texts.

So the Lacanian registers of *Symbolic*, *Imaginary*, and *Real* may be read

through intuitions that could just as well be captured by theories which are decidedly not Lacanian — Analytic Philosophy of Mind, Husserl, etc. "Symbolic" can be read as concept-systems; "Imaginary" as personal identity or apperceptive unification; "Real" as phenomenal affectivity and the experience of the world as a surrounding material terrain. The concept of the Real, for example, may be read through the lens (or filtered through intuitions to this effect) of notions like *qualia*, or the Saussurian distinction of signifier and signified. The Lacanian structure then migrates to different conceptual frameworks, even if it retains some of its structural form: the Symbolic read as akin to the Saussurian signified, the Real as the signifier, and Imaginary as the Speaking Subject. Or the Symbolic is read as concepts, the Real as qualia, and the Imaginary as mental states. Or the Symbolic is read as conceptual dispositions, the Real as hyletic sense-impressions, and the Imaginary as unification in temporal consciousness. Readers construct interpretive frameworks which may respond to Lacan, but in conceptual content or theory "semantics" mimic Husserl, or Saussure, or Jaegwon Kim: not becuase they have actually read Husserl (or Merleau-Ponty or Sartre, say) beforehand, or want to write some risqué article comparing Lacan and Jaegwon Kim, but because (using this example) their intuitions about mind are closer to Kim's than to Lacan's — maybe due to what they learned in High School, or because they have a rather computational folk theory of mind since they grew up with computers, or because the American and Analytic Philosophy of Mind is just more in sync with American attitudes and language.

Whatever the case, they are nevertheless reading Lacan, not Kim, because it's Lacan who is read in Film Studies courses and Film Studies is what they're interested in. Students choose topics based on their interests, not on whether the intuitions of the canonical experts align with their own. The result is that students end up in departments based on their interests when they might be more conceptually in sync with different departments based on their intuitions — so the canonical texts of their chosen fields get reconstructed, mutated, Derrida read as if the reader were actually reading Thomas Kuhn, say, or Lacan read as a nascent theorist of embodiment, or as a psychiatric application of Merleau-Ponty. Someone can write a term paper about Lacan in which the "work" done by Lacanian theory could be done just as well, and with less inter-textual distortion, by Mark Johnson or Sean Dorrance Kelley. But such distortions are not simply or necessarily poor scholarship; they reflect a sometimes inevitable, and even productive, theory drift, in which the mutation of theoretical *concepts* also sustains some theoretical *structure*, and so may suggest new possibilities in the context of a new theoretical frame.

So, for example, my various (mis)readings of the Lacanian triad are not wholly unfounded, especially considering Lacan's roots in Saussure and Sartre: there is some conceptual link betwen the Symbolic and concepts, conceptual dispositions, societal norms, and signifieds; between the Real and qualia, hyletic sense-impressions, material conditions, and signifiers; between the Imaginary

35

and personal identity, the Speaking Subject, the *cogito*, and the Trasncendental Unity of Apperception. As these concepts (that is, notions, concepts-within-theory) migrate across these different frames (that is, theory-frames, conceptual frames deliberately cultivated for an investigative, explanatory, and contemplative system), their theorized structural relations migrate also; so reading Lacan through Jaegwon Kim or Merleau-Ponty intuitions is not just reading *Real* as qualia (or hyle), *Symbolic* as concepts (or conceptual intersubjectivity), *Imaginary* as mental states (or embodied selves): it is reading the *structure* of Symbolic-Imaginary-Real as a structure of Concept / Mental State / Quale, or of Conceptual Intersubjectivity / Embodied Self / Hyletic Data. And — once the Lacanian start button is set aside and the argumentation is understood as just the writer's attempt to create a plausible coherence of concepts — these latter strutures, employed as a theoretical matrix to analyze the structure and significations of a film, or a political party, or an urban design, may produce a text worth reading.

What I have called "theory drift" is part of a larger phenomenon in (particularly) the human science, where there do not exist the kind of very succinct and describable boundaries and separations between topics. The groups in this theory are Abelian, and in that one noncommutative; the topologies over here are Hausdorff, and over there are not; String Theory uses one kind of field equation, and Loop Quantum Gravity another kind. These are not usually matters of ideology or academic politics: a theory is built around Abelian groups simply because the phenomena, which the theory studies, give rise to operations that happen to be xxx. But humanities research does not have straightforward axioms or equations to partition the theoretical landscape. Texts in the human sciences may cluster around certain methodologies, traditions, charismatic figures, and so forth, but — if my account of "theory drift" has some merit — these frames may not be all that related to the actual content of the texts. A writer's research triangulates their topics, their intuitions, and their textual sources, and the interior of this triangle may belie (conscious or subconscious) influences from theories and disciplines present in the intuitions but not normally associated with the topic.

One practical maxim of this argument is pedagogical: students should be encouraged to look for sources which align with their intuitions, reading beyond conventional disciplinary boundaries. Confusion or misinterpretation of primary texts may sometimes be addressed, not by asking students to reread or restudy those texts, but by identifying the theoretical place of those prior texts in the new one and whether that place may be better served by different (and perhaps institutionally distant) ones. If a paper on Derrida reads more like a paper on Kuhn, maybe it should *become* a paper on Kuhn. But my more general point is that obvious vectors of textual classifcation do not necessarily apply. A paper on Lacanian Film Theoy may not really be *about* either Lacan or Film, at least if "about" means that these are the primary topics of interest to those who

would enjoy readng it. I have an open-minded curiosity, but hardly a profound or professorial knowledge, of Women's Studies and Modern Painting; but I find Pollock's aforementioned paper extremely interesting, not for reasons of gender or of painting but for its integration of cognitive and cultural-semiotic themes. The really interesting work done in humanities research lies in theoretical structures and how these respond to real-world conditions in culture, history, politics, economics, and significations, both through language and through cultural objects. The formations at play in a text cannot necessarily be anticipated by its title, its bibliography, or its author's departmental affiliation.

Applying these comments to matters of culture and cognition, I don't think that anyone can seriously deny that social and cultural reality has a cognitive dimension: members of a community *decide* on whom to vote for, whom to marry, what career to pursue, where to aspire to live, etc. It is just as obvious that emotional, affective, and irrational factors are also in play: we need to manage the interplay of concepts and emotions, so that they may synthesize into a purposive life. Obviously, too, there are times when this balance breaks down: where "purpose" comes to mean just following everyday routines, without a sense of their large value, and so feelings of depression and alienation; or, conversely, when the existential structures of purpose as a whole break down, and people cannot or will not even go through these motions. It is a failure of the cognitive order when an addict cannot help but relapse, or a government cannot prevent a civil war. But in these cases explanations *for* this failure are themselves partly cognitive, so cognitive theories remain relevant.

I therefore do not believe that any writer or reader comes to texts on culture and society without some implicit "theory of mind"; without an intuitive cognitive model. Such intuitions-about-cognition may not be a declared theory of mind; but they define at least (say) a "subtheory". I think this cognitive dimension should be embraced; that texts in the human sciences should try to clarify these intuitions, explore their commitments, not necessarily so as to build an elaborate and rigid system, but so as to make cognitive issues part of the public interface of the text. How the cognitive relates to broader social and cultural themes remains subject to debate. I think culture can be seen as a kind of emergent property of individual cognitive acts, so that conceptions with established treatments in the philosophy of science, such as "emergence" and the kind of non-eliminative reductive analysis or ontology, which often accompanies emergent properties and systems, as well as notions of "multiscale analysis", then come into play. The general meta-theoretic or meta-scientific triad of emergence, non-eleminative reduction, and multi-scalarity, therefore becomes relevant as a methodology and ontology which can guide humanistic research (perhaps this framework is similar to David Woodruff Smith's "multiple-aspect" theories).

But these are simply my own intuitions. Different intellectual traditions,

within the human sciences, may have different philosophical responses to the problems of theoreticity itself in the domain of a "theory of mind". It is one thing to have a subtheory, but the process of communicating subtheoretic intuitions within a theoretic structure, one which rests on scientific principles (like cognitive science) and aspires to a stable, quasi-scientific ezpresssiveness — this conception of theoreticity does not always jive with scholars' views on language and epistemology. So different writers in a textual network (responding to similar texts and the topics they foreground) can differ not only in intuitions but also in the proper interpretive and discursive vehicle for negotiating them. While there may be "Lacanian" analyses (to continue my earlier hypothetical discussion) which both entertain and can be clarified by the systematic presentation of a (sub)theory with cognitive dimensions, there can certainly be Lacan-inspired analyses which are both sympathetic to those aspects of Lacan's thought, are also critical of scientific paradigms. Scholars can find quasi-scientific aspirations — an instinctive faith in system-building; in terminological nuance as a carrier of ever-refined models of truth — problemmatic for a variety of reasons: linguistic, epistemological, philosophical, political, institutional.

So a "Unified Concept Theory", as it look beyond just domains like Phenomenology and Cognitive Science — where a kind of theoretical unification is essentially strutural, a matter of charting and comparing defitional and relational structures — and engages topics in sociology, politics, "Race, Class, and Gender", and the larger space of human science — at some point the challenge goes from one of building a more-inclusive system to one of confronting questions about the nature and reliability of system and inclusiveness in the first place. But we cannot at the outset assume that the humanities can be neatly divided into one camp which accepts systematic aspirations (including ones ultimately rooted in natural science, as Cognitive Science arguably is as a whole), and another which critiques system-building in general, and in natural-scientific paradigms in particular.

Concepts are certainly cognitive phenomena. They are used by the mind to classify, recognize patterns, reason about relations among abstracta, and connect the abstract to the concrete. But concepts also organize, frame, cosaturate, filter, and anticipate other mental or experiential phenomena which are of interest beyond cognitive topics proper: emotions, "raw feels", motor intentionality, perceptual awarness, self-consciousness, etc. To some degree, the (structural, scientific, mathematical, computational) formulations which cognitive science or cognitive linguistics use to model and study concepts and conceptual frames (and conceptual spaces, networks, graphs, etc.) can be extended to these other domains, building theories with a similarly structural paradigm of theoreticity, even if the structures themselves are different or extended from a cognitive-scientific and -linguistic foundation. This expanded vision of theoretical structure, where cognitive and phenomenological and/or personal themes are integrated, can then be a productive matrix for approaching general texts

addressed to humanistic, social and cultural themes. The underlying paradigm of strutural theory may not carry over unproblemmatically, but this is a matter which can be difficult to anticipate on a coarse-grained scale. It has to be settled on a text-by-text basis.

So a "Unified Concept Theory", inside its unification, has to incorporate those theories which appreciate the spectrum of human-scientific research. This does not mean creating a single all-encompassing theory, but rather addressing how research lies in mesh of theories, which are interlinked even in the absence of a single Grand Unified Theory, and even if there is no settled notion — not only between theories but also among adherents to one single theory — of theoreticity itself and of how the strutural, systematic demands of theoretical reason are to be met in the less problammatic ways. Some writers may feel that an approach which balances natural and human science is the least problemmatic, and others disagree, but there can still be formulations and arguments which these respective writers can borrow from one another. Conceptual and structural parallels can cut across paradigms and disciplines. Such parallels can only be identified by taking texts themselves, not paradigms or disciplines, as the basic units of human-scientific reasoning. Once we have bracketed the infrastructure of disciplines and theoretical units, however, it becomes more difficult to define a large-scale organization within the vast space of research literature. This is a constitutive problem for a "unified concept theory", but at this level it is not a problem of theory pre se: it is a problem of the existing state of our technologies for reading and evaluating humanities texts.

Finally, then, Unification also means integration in research technology: the software, corpora, and document formats which provide an infrastruture for research collaboration. This infrastructure, as of now, is less advanced and less computationally informed in the human sciences than its analogues in the natural sciences or mathematics (or, for that matter, law and medicine). Fortunately, theories within cognitive science and in the general "theory of concepts" — (Semantic Web) Applied Ontologies, Conceptual Graph Semantics, Lexical Semantic Analysis, Formal Concept Analysis, etc. — are well-suited to this higher-order role. They are not just strutures in cognitive theories themselves, but design patterns for the technologies which can manage theories and texts.