

# Moral Property Reduction

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*"In space, no one can hear you think."*

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# 1 Moral Property Reduction

## 1.1 Introduction to Moral Property Reduction

The question of how moral properties relate to the rest of reality stands as one of the most profound and persistent challenges in philosophical inquiry. When we declare an action “right” or a state of affairs “good,” what exactly are we attributing to these things? Do moral properties like goodness, rightness, and wrongness exist as distinct features of the world, or can they be understood in terms of more fundamental, non-moral properties? This question lies at the heart of moral property reduction, a metaethical position that has generated extensive debate across centuries of philosophical discourse. The reductionist approach to moral properties represents not merely an abstract metaphysical thesis but a fundamental orientation toward the nature of value itself—one with far-reaching implications for how we understand moral knowledge, motivation, and the objectivity of ethical claims.

To properly engage with this philosophical position, we must first clarify its central concepts. Moral properties encompass those characteristics we attribute to actions, states of affairs, persons, or institutions when making ethical evaluations. These include properties such as goodness, badness, rightness, wrongness, virtue, vice, justice, and injustice. When we say that helping others is “good,” that telling the truth is “right,” or that cruelty is “wrong,” we are ascribing moral properties to these actions or traits. The fundamental question of moral property reduction concerns the metaphysical status of these properties: Do they constitute a unique domain of reality, or can they be reduced to or identified with properties that are not inherently moral?

Reductionism, broadly construed in philosophical terms, represents the thesis that certain phenomena or properties can be fully explained by or identified with more basic phenomena or properties. In the context of ethics, moral property reduction specifically maintains that moral properties can be reduced to non-moral properties. This reduction might take various forms: moral properties could be identical to natural properties (such as psychological states, social relations, or evolutionary fitness factors), constituted by such properties, or entirely explainable in terms of them. The reductionist project thus aims to demystify moral properties by showing how they fit within the broader natural or supernatural order, depending on the specific reductionist framework.

A crucial distinction within moral property reduction emerges between ontological reduction and explanatory reduction. Ontological reduction concerns the metaphysical relationship between moral and non-moral properties, asserting that moral properties either are identical to or are entirely constituted by non-moral properties. This view maintains that there is nothing more to a moral property than the non-moral properties that realize or constitute it. For instance, an ontological reductionist might claim that the property of “being morally right” simply is the property of “maximizing overall happiness” or “being commanded by God,” depending on their specific reductionist framework. Explanatory reduction, by contrast, focuses on how moral phenomena can be fully explained without recourse to irreducibly moral properties. While explanatory reductionists might remain neutral on the strict ontological identity of moral and non-moral properties, they maintain that moral facts can be entirely accounted for by non-moral facts, and moral explanations can

be replaced by non-moral explanations without loss of explanatory power.

The significance of moral property reduction extends far beyond narrow metaphysical debates, playing a central role in broader metaethical inquiries about the nature of morality itself. Metaethics, as the branch of ethics concerned with the fundamental nature of ethical thought, language, and reality, grapples with questions about the objectivity of moral claims, the possibility of moral knowledge, and the practical authority of moral norms. Moral property reduction directly engages with each of these dimensions, making it a pivotal position within contemporary metaethics.

The reducibility of moral properties matters profoundly for moral epistemology—the study of how we acquire moral knowledge and justify moral beliefs. If moral properties reduce to natural properties, then our knowledge of moral facts might be acquired through the same methods we use to gain knowledge of natural facts, such as empirical observation, scientific investigation, or rational inference. This potential alignment between moral and non-moral epistemology offers reductionists a response to skeptical challenges about how we could possibly know moral facts if they constituted a radically different kind of reality from the natural world. Conversely, if moral properties cannot be reduced to natural properties, moral epistemology faces the formidable challenge of explaining our access to these allegedly non-natural facts.

Moral motivation represents another domain profoundly affected by questions of moral property reduction. The practical dimension of morality—its capacity to guide action and provide reasons for conduct—appears intimately connected to the nature of moral properties themselves. Reductionist approaches offer various accounts of why moral judgments motivate us, typically by linking moral properties to features already connected to motivation, such as desires, emotions, or self-interest. For example, if moral properties reduce to properties that fulfill our natural human needs or promote social cooperation, then our motivation to act morally might be explained through these more fundamental motivational sources. The challenge for reductionism is to show that its account of moral properties can adequately capture the distinctive normative force of moral judgments—their ability to not merely describe but to guide and evaluate behavior.

The implications of moral property reduction extend to the fundamental debate between moral realism and anti-realism. Moral realism maintains that there are objective moral facts that exist independently of human attitudes, conventions, or practices. Anti-realism, by contrast, denies the existence of such objective moral facts, offering various accounts of moral discourse as expressing non-cognitive attitudes, projecting subjective preferences, or constituting social constructs. Moral property reduction typically aligns with a realist orientation, as reductionists generally maintain that moral properties are real features of the world—they simply deny that these properties are irreducibly moral. By reducing moral properties to natural or supernatural properties that are objectively real, reductionists can preserve moral realism while avoiding the metaphysical extravagance of positing a separate realm of irreducibly moral facts. However, some forms of reductionism might also be compatible with certain anti-realist positions, depending on how the reduction is understood and what non-moral properties are invoked in the reduction.

The debate over moral property reduction is notable for its interdisciplinary nature, drawing upon insights and methodologies from diverse fields beyond philosophy proper. Psychology contributes empirical findings about moral judgment formation and moral development, which both inform and constrain reductionist

accounts of moral properties. Neuroscience examines the neural correlates of moral cognition, potentially revealing how moral properties might be instantiated in or reducible to brain states. Evolutionary biology explores the origins of moral capacities and behaviors, suggesting how moral properties might relate to adaptive functions. Anthropology documents the variation and commonalities in moral systems across cultures, providing data for evaluating reductionist claims about moral universals. This interdisciplinary engagement enriches the philosophical debate while also complicating it, as reductionists must navigate the complex relationship between philosophical analysis and empirical investigation.

This article aims to provide a comprehensive examination of moral property reduction, exploring its historical development, philosophical foundations, varieties, arguments, criticisms, and implications. The journey through this complex terrain begins with an exploration of the historical evolution of moral property reduction, tracing its precursors in ancient and medieval philosophy, its development in early modern thought, and its transformation in the twentieth century. This historical perspective reveals how reductionist approaches to moral properties have been shaped by broader intellectual movements and how they have evolved in response to emerging challenges.

The article then delves into the philosophical foundations of moral property reduction, examining the metaphysical, epistemological, semantic, and methodological assumptions that undergird reductionist approaches. This analysis reveals the deep theoretical commitments of moral property reduction and how these commitments connect to broader philosophical debates about the nature of properties, knowledge, meaning, and inquiry.

A detailed exploration of the major varieties of moral property reduction follows, including reductive naturalism, reductive supernaturalism, reductive non-naturalism, and functional reductionism. This examination highlights the diversity within reductionist approaches and how different reduction frameworks invoke distinct kinds of non-moral properties to account for moral phenomena.

The article then presents and analyzes the key arguments in favor of moral property reduction, including arguments from ontological parsimony, causal efficacy, supervenience, and moral progress and disagreement. These arguments represent the primary considerations that motivate philosophers to embrace reductionist approaches to moral properties.

Subsequently, the article examines the major criticisms and objections to moral property reduction, including the Open Question Argument, the Argument from Queerness, the Normativity Objection, and the Multiple Realizability Objection. These challenges represent the most significant philosophical obstacles to reductionist accounts of moral properties and have shaped the development of reductionist theories in response.

The article situates moral property reduction within the broader landscape of metaethical positions, examining its relationships to non-reductive naturalism, non-naturalism, expressivism and non-cognitivism, and error theory. This comparative analysis reveals how reductionist approaches both differ from and share common ground with alternative metaethical views.

Scientific approaches to moral property reduction are then explored, examining how evolutionary biology, neuroscience, psychology, and anthropology have contributed to our understanding of moral properties and

their potential reducibility. This section highlights the empirical dimensions of the reductionist project and the challenges of bridging scientific and philosophical accounts of morality.

The cultural and social dimensions of moral property reduction are examined, exploring how reductionist approaches interact with cultural relativism, social progress, applied ethics, and moral education. This analysis reveals the practical implications of reductionist views for understanding moral diversity and guiding social practice.

The article then investigates the practical implications and applications of moral property reduction for moral reasoning and decision-making, legal and political theory, artificial intelligence and machine ethics, and personal and interpersonal relationships. This section demonstrates how abstract metaphysical debates about moral properties can have concrete consequences for how we live and organize our societies.

Contemporary debates and developments in moral property reduction are examined, including new reductionist frameworks, challenges from experimental philosophy, cross-disciplinary approaches to moral reduction, and global and comparative perspectives. This exploration reveals the dynamic nature of ongoing research in this area and emerging directions for future investigation.

Finally, the article concludes with a synthesis of the debate on moral property reduction, an assessment of unresolved questions and challenges, an identification of promising avenues for future research, and reflections on the enduring significance of moral property reduction for philosophy and beyond.

Throughout this comprehensive examination, the article maintains a balanced approach, presenting the arguments for and against moral property reduction with clarity and rigor while highlighting the fascinating details and conceptual nuances that make this debate so compelling. The reader is invited to engage deeply with the complex questions surrounding the nature of moral properties and their relationship to the rest of reality, questions that continue to captivate philosophers and challenge our understanding of morality itself.

As we turn now to the historical development of moral property reduction, we will discover how this philosophical position has evolved over time, shaped by the intellectual contexts of different eras and refined through centuries of philosophical reflection and debate. This historical journey reveals not only the origins of contemporary reductionist approaches but also the enduring nature of the fundamental questions that drive the investigation of moral properties and their place in the fabric of reality.

## **1.2 Historical Development of Moral Property Reduction**

The historical evolution of moral property reduction reveals a fascinating intellectual journey spanning millennia, reflecting humanity's enduring quest to understand the fundamental nature of moral properties within the broader fabric of reality. As we trace this development from ancient philosophical inquiries to contemporary formulations, we witness not merely a linear progression but a complex interplay of emerging insights, persistent challenges, and revolutionary transformations in how philosophers have conceived the relationship between moral phenomena and the rest of existence.

Ancient Greek philosophy provides the earliest documented explorations of what might now be recognized as reductionist approaches to moral properties, though the explicit terminology of "reduction" would not

emerge for centuries. The Presocratics, with their emphasis on identifying fundamental principles underlying all phenomena, implicitly suggested that moral values might be grounded in these basic elements of reality. Thales's identification of water as the *archē*, or Anaximenes's appeal to air as the primary substance, while primarily cosmological, opened conceptual pathways for understanding moral properties as manifestations of more fundamental natural processes. Heraclitus's doctrine of universal flux and the unity of opposites further suggested that moral distinctions might emerge from the dynamic interplay of natural forces rather than constituting a separate metaphysical domain.

Aristotle's ethical philosophy represents perhaps the most sophisticated ancient precursor to moral property reduction, offering a naturalistic framework that grounds moral properties in human nature and teleology. In his *Nicomachean Ethics*, Aristotle systematically argues that moral virtues and the good life for humans (*eudaimonia*) cannot be understood in isolation from our biological and psychological constitution. Rather, moral properties emerge from the proper functioning of human faculties within social and political contexts. For Aristotle, the virtue of courage is not an abstract moral quality but a disposition that finds its mean between excessive fear and insufficient fear, calibrated to promote human flourishing in dangerous situations. This naturalistic approach explicitly locates moral properties within the natural order of human life, reducing them to dispositions that contribute to the realization of our essential nature as rational, social animals. The famous Aristotelian doctrine of the mean illustrates this reductionist tendency: moral virtues are identified as states of character lying between extremes of excess and deficiency, with their specific determination dependent on human nature and practical circumstances rather than transcendent moral facts.

The Stoic tradition advanced a different but equally significant reductionist approach to moral properties, grounding them in the rational order of the cosmos. For Stoics like Zeno of Citium and Chrysippus, moral properties are not separate from natural properties but reflect the rational structure of the universe itself. The Stoic concept of *logos*—the rational principle governing all things—provided a metaphysical foundation for identifying moral properties with natural properties that align with cosmic reason. Moral virtue, in this view, consists in living in accordance with nature, which means conforming one's actions to the rational order that permeates reality. This identification of moral properties with natural properties that instantiate cosmic rationality represents a form of reductionism, as moral facts become facts about natural harmony and rational coherence. The Stoic sage, whose judgments perfectly align with nature, exemplifies this reduction of moral excellence to cognitive and attitudinal states that accurately reflect the natural order.

Epicureanism offered yet another ancient reductionist framework, reducing moral properties to states of pleasure and pain and their role in achieving tranquility (*ataraxia*). Epicurus argued that the good life consists in the absence of physical pain and mental disturbance, making moral properties dependent on their capacity to produce or prevent these states. Virtues like justice, prudence, and courage are valuable not because of any intrinsic moral properties but instrumentally, as they contribute to a life free from fear and suffering. This hedonistic reduction of moral properties to their psychological consequences anticipates later utilitarian approaches while grounding morality firmly in natural human experiences of pleasure and pain. The Epicurean garden, where followers cultivated simple pleasures and friendships as the path to happiness, embodied this reductionist conception of moral properties as means to natural human ends.

Medieval scholastic philosophy, particularly through the work of Thomas Aquinas, synthesized Aristotelian naturalism with Christian theology to create a sophisticated reductionist framework that remained influential for centuries. Aquinas's *Summa Theologica* systematically addresses moral properties by reducing them to their foundation in divine nature and natural law. For Aquinas, moral properties are not autonomous but reflect the eternal law of God as rational beings can apprehend it through reason and natural inclination. The natural law tradition reduces moral principles to precepts that can be derived from human nature and its inherent ends: self-preservation, procreation and education of offspring, living in society, and pursuing truth about God. Moral properties like “good” and “right” are thus reduced to properties that align human actions with these natural inclinations and their ultimate fulfillment in God. This theological naturalism represents a form of supernatural reductionism, where moral properties are grounded in divine nature rather than being irreducibly moral facts. The intricate medieval debates about whether moral properties are identical to natural properties or merely reflect them—captured in distinctions between *bonum honestum* (moral good) and *bonum utile* (useful good)—reveal the sophisticated reductionist reasoning at work in scholastic ethics.

The early modern period witnessed dramatic shifts in how moral properties were conceptualized, with several philosophers developing explicit reductionist approaches that continue to influence contemporary debates. Thomas Hobbes's *Leviathan* (1651) presents perhaps the most radical early modern reduction of moral properties to psychological and social facts. For Hobbes, moral distinctions like “good” and “evil” do not refer to objective features of actions but simply denote objects of desire and aversion in individuals. More fundamentally, Hobbes reduces the entire moral order to the requirements of social contract and self-preservation in the state of nature. In his famous formulation, where life without government is “solitary, poor, nasty, brutish, and short,” moral properties emerge solely as conventions necessary to escape this condition. Justice, for instance, is not an intrinsic property of actions but merely “the keeping of covenants” that individuals agree to uphold for mutual benefit. This reduction of moral properties to psychological states (desires/aversions) and social conventions (contractual agreements) represents a powerful form of naturalistic reductionism that anticipates later contractarian and expressivist approaches.

David Hume's sentimentalist moral philosophy, developed in *A Treatise of Human Nature* (1739-40) and *An Enquiry Concerning the Principles of Morals* (1751), offers another influential early modern reductionist approach. Hume explicitly argues that moral properties are not discovered by reason but arise from sentimental responses to actions and character traits. His famous assertion that “reason is, and ought only to be the slave of the passions” captures his view that moral judgments express feelings of approval or disapproval rather than describing objective moral facts. For Hume, the virtue of benevolence is not good because of some inherent moral property but because it elicits a pleasing sentiment in observers through sympathy with those affected by benevolent actions. This reduction of moral properties to emotional responses and their social transmission through sympathy represents a sophisticated psychological reductionism. Hume's “is-ought” problem—his observation that moral conclusions cannot be logically deduced from purely factual premises—challenges reductionist definitions but also points toward a different kind of reduction where moral properties are constituted by natural human sentiments rather than objective features of the world.

The utilitarian tradition, inaugurated by Jeremy Bentham and developed by John Stuart Mill, provides perhaps the clearest historical example of systematic moral property reduction. Bentham's *An Introduction to*



*the Principles of Morals and Legislation* (1789) introduces the principle of utility as the foundation for morality, explicitly reducing moral properties to their capacity to produce pleasure and prevent pain. Bentham's hedonic calculus—quantitatively measuring pleasures and pains according to intensity, duration, certainty, propinquity, fecundity, purity, and extent—represents a bold attempt to reduce all moral distinctions to measurable natural phenomena. For Bentham, an action is morally right simply in virtue of its tendency to maximize pleasure and minimize pain, with no additional moral properties required. John Stuart Mill, in *Utilitarianism* (1863), refined this approach by distinguishing between higher and lower pleasures but maintained the fundamental reduction of moral properties to psychological states. Mill's famous declaration that "it is better to be a human being dissatisfied than a pig satisfied; better to be Socrates dissatisfied than a fool satisfied" attempts to preserve qualitative distinctions within a broadly reductionist framework that still grounds moral properties in natural states of consciousness. The utilitarian reduction of moral properties to pleasure and pain remains one of the most influential and systematically developed reductionist programs in ethical theory.

Immanuel Kant's moral philosophy, while often contrasted with reductionist approaches, inadvertently stimulated the development of anti-reductionist thought that shaped subsequent debates. In *Groundwork of the Metaphysics of Morals* (1785) and *Critique of Practical Reason* (1788), Kant argued that moral properties cannot be reduced to natural properties because morality requires a categorical imperative that binds rational agents unconditionally, regardless of their natural inclinations or consequences. The moral law, for Kant, is not derived from natural facts about human psychology or social arrangements but from the very nature of rational agency itself. This non-naturalistic conception of moral properties as grounded in pure practical reason provided a powerful alternative to reductionist approaches and influenced later anti-reductionist positions. However, Kant's insistence that moral principles must be universally valid for all rational beings also introduced a different kind of reduction, where moral properties are reduced to formal features of rationality rather than substantive natural properties. The tension between these aspects of Kant's thought—his rejection of naturalistic reduction alongside his appeal to universal rational principles—would continue to inform metaethical debates well into the twentieth century.

The twentieth century witnessed both the refinement of reductionist approaches and the emergence of powerful philosophical challenges that transformed the landscape of metaethical debate. The rise of logical positivism in the early decades of the century, particularly through the work of A.J. Ayer in *Language, Truth, and Logic* (1936), introduced the verification principle as a criterion of meaningfulness that had profound implications for moral property reduction. Ayer's emotivism held that moral statements do not express propositions that can be true or false but merely express emotional attitudes and influence others' behavior. For Ayer, saying "stealing is wrong" is equivalent to saying "stealing—boo!" or expressing disapproval of stealing. This reduction of moral discourse to emotional expression represents a radical form of reductionism that eliminates moral properties entirely from ontology. Charles Stevenson developed a more sophisticated version of emotivism in *Ethics and Language* (1944), distinguishing between the descriptive and dynamic meaning of moral terms and analyzing how moral judgments combine factual beliefs with emotive attitudes. The positivist reduction of moral language to non-cognitive functions represented one influential strand of twentieth-century reductionism, though it faced significant challenges in accounting for the logical structure

of moral discourse.

The early analytic tradition also witnessed the development of ethical naturalism as a systematic reductionist approach, most notably through the work of philosophers like Ralph Barton Perry and Edward O. Wilson. Perry's *General Theory of Value* (1926) introduced the concept of "interest" as the fundamental category for understanding value, reducing moral properties to objects of interest for sentient beings. This interest theory of value explicitly aimed to bridge the gap between factual judgments and value judgments by identifying value with interest-satisfaction. Wilson's *Sociobiology: The New Synthesis* (1975) extended this reductionist project to evolutionary biology, arguing that moral properties can be reduced to biological traits that evolved through natural selection because they enhanced reproductive fitness. This evolutionary reductionism suggests that moral sentiments like altruism and fairness are adaptive strategies that conferred survival advantages on our ancestors, making moral properties ultimately explicable in biological terms. The Cornell realism school, developed by Richard Boyd, Nicholas Sturgeon, and David Brink in the 1980s, offered a more sophisticated naturalistic reductionism, arguing that moral properties are natural properties that play a causal role in explaining social phenomena and can be investigated through empirical methods similar to those used in the natural sciences.

G.E. Moore's *Principia Ethica* (1903) presented the most significant challenge to moral property reduction in the twentieth century through his Open Question Argument. Moore argued that any attempt to define "good" in terms of natural properties (such as pleasure or desire-satisfaction) must fail because it will always be an open question whether the natural property in question is truly good. For example, even if we define "good" as "what we desire to desire," we can still meaningfully ask, "Is what we desire to desire actually good?" Moore concluded that "good" must refer to a simple, unanalyzable, non-natural property that cannot be reduced to natural properties. This argument cast a long shadow over reductionist approaches and stimulated decades of debate about how reductionists might respond. Philosophers like Frank Jackson later attempted to address Moore's challenge through analytical reductionism, arguing that moral terms refer to natural properties that play the appropriate causal and functional roles in our moral practices, even if this connection is not immediately obvious to ordinary speakers. The development of "Cornell realism" by Boyd and others represented another response, arguing that moral properties are natural properties that can be known empirically despite their resistance to simple conceptual analysis.

The mid-twentieth century also witnessed the rise of non-cognitivism as an alternative to both reductionist and non-reductionist cognitivist approaches. Building on the emotivist tradition, philosophers like R.M. Hare developed prescriptivism in *The Language of Morals* (1952), arguing that moral judgments function as universalizable prescriptions rather than descriptions of moral properties. For Hare, saying "stealing is wrong" is not describing a moral property but issuing a command not to steal that one universalizes to all similar situations. Simon Blackburn's quasi-realism, developed in works like *Spreading the Word* (1984), attempted to find common ground between reductionist and non-cognitivist approaches by showing how non-cognitivist accounts of moral discourse might still capture the realist-seeming features of moral language. Blackburn argued that even if moral judgments express attitudes rather than describe moral properties, we can develop "realist-seeming" ways of talking about morality that preserve the practical and discourse-structuring functions of moral language. This sophisticated non-cognitivist approach represented both a challenge to

traditional reductionism and an attempt to incorporate reductionist insights about the natural basis of moral phenomena.

As the twentieth century progressed, the debate over moral property reduction became increasingly sophisticated, with philosophers developing nuanced positions that occupied the complex terrain between strict reductionism and robust non-reductionism. The emergence of supervenience as a central concept in metaethics, particularly through the work of Donald Davidson and Jaegwon Kim, provided new tools for analyzing the relationship between moral and natural properties without committing to strict reduction. Philosophers like David Lewis explored whether moral properties might be reducible to natural properties through the method of Ramsey sentences and functional definitions, while others like Christine Korsgaard defended Kantian constructivist approaches that located moral properties in the practical reasoning of agents rather than in either natural or non-natural realms. The historical development of moral property reduction thus reached a point of conceptual complexity that set the stage for contemporary debates about the metaphysical, epistemological, and semantic foundations of moral properties.

This historical survey reveals that moral property reduction is not a monolithic position but a family of approaches with diverse metaphysical commitments and methodological strategies. From Aristotle's naturalistic teleology to contemporary Cornell realism, reductionist philosophers have sought to understand moral properties as intimately connected to the natural (or supernatural) order, though they have differed significantly in how they conceive this connection. The persistent challenges to reductionism—from Moore's Open Question Argument to questions about normativity and moral motivation—have shaped the development of increasingly sophisticated reductionist frameworks that attempt to address these concerns while maintaining the core insight that moral properties are not ontologically fundamental. As we turn to examine the philosophical foundations of moral property reduction, we will

### 1.3 Philosophical Foundations of Moral Property Reduction

As we turn to examine the philosophical foundations of moral property reduction, we will discover that beneath the surface of this metaethical position lies a rich and complex theoretical architecture. The reductionist approach to moral properties does not emerge in a philosophical vacuum but rests upon a network of metaphysical, epistemological, semantic, and methodological assumptions that collectively support its distinctive understanding of moral reality. These foundations provide the conceptual framework within which reductionist theories operate, shaping how philosophers conceptualize the relationship between moral properties and the broader fabric of reality. By examining these foundations in detail, we gain deeper insight into not only what reductionists claim about moral properties but also why they find these claims compelling and how they attempt to defend them against philosophical challenges.

The metaphysical foundations of moral property reduction concern the fundamental nature of reality and how moral properties fit within this broader ontological landscape. At the heart of these foundations lies the concept of reduction itself—a metaphysical relation that has been variously understood throughout philosophical history. In its strongest form, reduction involves type-identity, where a property of one kind is held to be numerically identical with a property of another kind. This identity theory of reduction finds its classic

expression in the philosophy of mind through the work of philosophers like J.J.C. Smart and U.T. Place, who argued that mental states are identical to brain states. Applied to moral properties, this strong reductionist view would hold that moral properties simply are natural properties—there is no more to the property of being morally right than there is to the property of, say, maximizing happiness or promoting social cooperation. This eliminative form of reduction claims that moral properties do not exist as distinct entities but are merely natural properties described in moral language. For instance, a strong reductionist might assert that the moral property of “rightness” is identical to the natural property of “promoting the greatest happiness for the greatest number,” with no residual moral element remaining.

A more nuanced metaphysical approach to moral property reduction emerges through the concept of supervenience, a relation that has become central to contemporary metaethical discussions. First systematically applied to ethics by R.M. Hare and later developed by Donald Davidson and Jaegwon Kim, supervenience captures the idea that moral properties depend on natural properties without necessarily being identical to them. The supervenience thesis holds that there cannot be a difference in moral properties without a corresponding difference in natural properties—two actions or states of affairs that are identical in all natural respects must also be identical in all moral respects. This dependency relation provides a metaphysical foundation for weaker forms of moral property reduction, allowing reductionists to maintain that moral properties are determined by natural properties without committing to strict identity. For example, a supervenience-based reductionist might claim that although the property of “being virtuous” is not identical to any specific natural property, it necessarily supervenes on natural properties like compassion, honesty, and courage, which are themselves natural psychological dispositions. This approach preserves the intuitive connection between moral and natural properties while allowing for the possibility that moral properties might be multiply realizable by diverse natural properties in different contexts.

The metaphysical foundations of moral property reduction also engage with questions of emergence and the hierarchical structure of reality. Emergentist positions, developed in the early twentieth century by philosophers like Samuel Alexander and C.D. Broad, maintain that certain properties emerge from more fundamental properties without being reducible to them. This emergentist framework presents a challenge to strong reductionist programs by suggesting that moral properties might emerge from natural properties while possessing novel causal powers that cannot be explained in terms of their base properties alone. In response, reductionists have developed sophisticated accounts of how emergent properties can be accommodated within a reductionist framework. For instance, Jaegwon Kim’s functional model of reduction attempts to show how apparently emergent properties can be understood as functional properties that are realized by more fundamental properties, thus preserving reductionism while acknowledging the hierarchical structure of reality. Applied to moral properties, this approach would treat moral properties as functional roles that are played by natural properties, allowing for reduction without eliminating the distinctive character of moral discourse.

The metaphysical debate over moral property reduction also intersects with broader questions about naturalism and the boundaries of the natural world. Naturalistic reductionists maintain that moral properties can be reduced to properties that are studied by the natural sciences, such as psychological, biological, or social properties. This naturalistic approach draws support from the success of scientific reduction in other

domains, such as the reduction of temperature to mean molecular kinetic energy or the reduction of water to  $H_2O$ . Philosophers like Richard Boyd and Nicholas Sturgeon have argued that just as these scientific reductions were achieved through empirical investigation, moral properties can likewise be identified with natural properties through careful empirical study of human moral practices and their effects. By contrast, non-naturalistic reductionists maintain that moral properties can be reduced to non-natural but non-moral properties, such as Platonic forms or divine attributes. This approach, historically associated with philosophers like Augustine and Aquinas, grounds moral properties in a supernatural reality while still reducing them to more fundamental non-moral properties. The metaphysical foundations of moral property reduction thus encompass a spectrum of positions, from strict naturalism to supernaturalism, united by the common commitment to understanding moral properties in terms of more fundamental non-moral properties.

The epistemological foundations of moral property reduction address fundamental questions about how we can know moral facts and justify moral beliefs. If moral properties reduce to non-moral properties, then our knowledge of moral facts should presumably be acquired through the same methods we use to gain knowledge of the properties to which moral properties reduce. This epistemological implication provides reductionists with a powerful response to skeptical challenges about moral knowledge. Non-reductionist positions, particularly non-naturalist views like those defended by G.E. Moore and Derek Parfit, face the formidable epistemological problem of explaining how we could have knowledge of moral properties if they constitute a radically different kind of reality from the natural properties we ordinarily know through perception and science. This epistemological challenge, famously articulated in Bertrand Russell's question "How do we know moral truths?" and later developed by J.L. Mackie as the "argument from queerness," suggests that non-reductionist moral realism posits a mysterious faculty of moral intuition that lacks adequate explanation.

Reductionist approaches offer various strategies to address this epistemological challenge. Naturalistic reductionists maintain that since moral properties are natural properties, we can know them through the same methods we use to know other natural properties—observation, experimentation, inference to the best explanation, and so forth. For example, if the moral property of "rightness" reduces to the natural property of "promoting well-being," then we can know whether an action is right by investigating whether it promotes well-being through empirical methods. This approach aligns moral epistemology with scientific epistemology, avoiding the need for special moral faculties. Philosophers like Peter Railton have developed sophisticated naturalistic theories of moral knowledge that treat moral facts as hypothetical facts about what would promote well-being under ideal conditions of information and rationality. On this view, moral knowledge is a kind of theoretical knowledge that we gain through the same processes of reasoning and inquiry that yield scientific knowledge.

Reductive supernaturalists, by contrast, ground moral knowledge in knowledge of divine attributes or commands. For example, if moral properties reduce to divine commands, as in divine command theory, then moral knowledge would be acquired through knowledge of these commands, which might be revealed through scripture, religious experience, or natural reason. This approach, defended by philosophers like Robert Adams, provides an epistemological foundation for moral knowledge by connecting it to theological epistemology. However, it faces the challenge of explaining how we can know divine commands or

attributes with sufficient confidence to ground moral knowledge.

The epistemological foundations of moral property reduction also engage with questions about moral justification and the structure of moral reasoning. Reductionist approaches typically offer coherentist or foundationalist accounts of moral justification that mirror accounts of justification in other domains. For instance, Cornell realists like Richard Boyd argue that moral beliefs are justified through their coherence with each other and with background theories about human nature and social interaction, much like scientific beliefs are justified through their coherence with observational data and theoretical principles. This coherence-based account of moral justification allows reductionists to explain how moral knowledge can progress through critical reflection and empirical investigation without appealing to self-evident moral truths or special moral intuitions.

Reductionists must also address the challenge of explaining the apparent a priori dimension of moral knowledge. Many moral philosophers, from Plato to Kant to contemporary intuitionists, have argued that at least some moral truths can be known a priori, through reason alone rather than empirical investigation. If moral properties reduce to natural properties that are known empirically, how can reductionists account for this apparent a priori moral knowledge? One response, developed by philosophers like Frank Jackson, suggests that although moral properties are natural properties, moral terms function as “thick ethical concepts” that combine descriptive and evaluative elements. On this view, when we make moral judgments, we are expressing our attitudes toward natural properties that we can identify a priori through conceptual analysis. For example, we might know a priori that “cruelty is wrong” because the concept of cruelty includes the idea that it is something to be disapproved of, even though the natural properties that constitute cruelty must be identified empirically. This approach attempts to reconcile the a priori dimensions of moral thought with a reductionist metaphysics by locating the a priori element in the conceptual connections between moral terms and our attitudes rather than in the metaphysical nature of moral properties themselves.

The semantic foundations of moral property reduction concern the meaning of moral language and how moral terms refer to properties in the world. Reductionist approaches to moral semantics maintain that moral terms refer to natural (or supernatural) properties, and moral sentences express beliefs about the instantiation of these properties. This semantic commitment distinguishes reductionist views from non-cognitivist positions like emotivism and prescriptivism, which hold that moral sentences do not express beliefs but rather emotions, prescriptions, or other non-cognitive states. The semantic debate between reductionists and non-cognitivists has been one of the most vigorous in twentieth-century metaethics, with significant implications for how we understand moral discourse.

One of the most influential semantic approaches to moral property reduction is the Cornell realist semantics developed by Richard Boyd in the 1980s. Boyd argues that moral terms refer to natural properties that play a causal role in regulating social practices and institutions. On this view, moral terms like “right” and “good” function as theoretical terms in a moral theory that explains social phenomena, much like terms like “electron” and “gene” function as theoretical terms in scientific theories that explain physical and biological phenomena. Just as we discovered that water refers to  $H_2O$  through empirical investigation, Boyd argues that we can discover what natural properties moral terms refer to through empirical investigation of human



moral practices and their effects. This causal theory of moral reference provides a semantic foundation for reductionism by explaining how moral language can be about natural properties even if speakers are not fully aware of which natural properties their terms refer to.

Another important semantic approach to moral property reduction is the analytic reductionism defended by philosophers like Frank Jackson and Philip Pettit. Jackson argues that moral terms can be analyzed into descriptive components that refer to natural properties. For example, the term “good” might be analyzed as “the kind of thing we desire to desire when we are fully informed and rational.” On this view, moral terms have descriptive meanings that can be specified without using moral vocabulary, and moral sentences express straightforward descriptive claims about the instantiation of these natural properties. This analytic approach provides a semantic foundation for reductionism by showing how moral language can be understood in terms of non-moral language.

The semantic foundations of moral property reduction must also address G.E. Moore’s Open Question Argument, which has been perhaps the most persistent challenge to reductionist semantics. Moore argued that for any proposed natural property N, it will always be an open question whether things that are N are good, showing that “good” cannot mean the same as any natural property. For example, even if we define “good” as “what we desire to desire,” we can still meaningfully ask “Is what we desire to desire actually good?” Reductionists have developed various responses to this challenge. One response, advanced by Jackson, is that although moral terms can be analyzed into descriptive components, this analysis may not be immediately obvious or transparent to ordinary speakers. Just as “water” can be analyzed as “H<sub>2</sub>O” even though this is not obvious to people who use the term, moral terms might have descriptive analyses that are not obvious to ordinary moral language users. Another response, developed by Boyd, is that the reference of moral terms is determined by the causal role of the properties they refer to rather than by conceptual analysis, so the Open Question Argument mistakenly assumes that moral meaning must be transparent to conceptual reflection.

The semantic foundations of moral property reduction also engage with questions about the normative dimension of moral language. Critics of reductionism often argue that moral language has an irreducibly normative aspect that cannot be captured by purely descriptive language. When we say that an action is “right,” we are not merely describing it but also endorsing it and prescribing it. Reductionists respond by attempting to show how this normative dimension can be accommodated within a descriptive semantics. One approach, developed by Peter Railton, is to argue that moral terms refer to natural properties that provide reasons for action. On this view, when we say that an action is right, we are describing it as having the natural property of providing reasons for action, and this description carries normative force because we have reason to do what provides reasons for action. This approach attempts to capture the normativity of moral language within a reductionist semantic framework by connecting moral properties to reasons for action, which are themselves natural properties of actions and agents.

The methodological foundations of moral property reduction concern the methods and approaches that reductionists use to investigate moral properties and justify reductionist claims. These methodological foundations reflect broader debates in philosophy about the relationship between philosophy and science, the role of empirical investigation in philosophical inquiry, and the proper methods for addressing metaphysical and

ethical questions.

One important methodological foundation of moral property reduction is naturalism, the view that philosophical inquiry should be continuous with scientific inquiry and that philosophical theories should be compatible with and informed by our best scientific understanding of the world. Naturalistic reductionists maintain that the investigation of moral properties should proceed through the same empirical methods that scientists use to investigate other natural properties. For instance, if moral properties reduce to psychological properties, then we should investigate these properties through the methods of psychology, such as experimental studies of moral judgment and decision-making. This naturalistic methodology is defended by philosophers like Owen Flanagan and Shaun Nichols, who argue that moral philosophy should be “empirically constrained” by findings from psychology, neuroscience, and evolutionary biology. The naturalistic methodology provides a methodological foundation for reductionism by suggesting that the same methods that have been successful in investigating other natural properties can be applied to the investigation of moral properties.

Another important methodological approach to moral property reduction is reflective equilibrium, developed by John Rawls and Norman Daniels. Reflective equilibrium is a method of justifying moral principles by seeking coherence between our considered moral judgments and the general principles that explain them. Reductionists can use this method to identify which natural properties moral properties reduce to by examining which natural properties best explain our considered moral judgments. For example, if we find that our judgments about which actions are right can best be explained by the principle that right actions are those that promote well-being, then we might conclude that the property of rightness reduces to the property of promoting well-being. This method provides a foundation for reductionism by offering a systematic way to identify the natural properties that moral properties reduce to while respecting the complexity of moral thought and practice.

Reductionists also employ counterfactual and thought experimental methods to investigate the relationship between moral properties and natural properties. For instance, philosophers like David Lewis have used thought experiments about possible worlds to explore whether moral properties necessarily supervene on natural properties. If we can imagine two worlds that are identical in all natural respects but differ in moral respects, this would suggest that moral properties do not supervene on natural properties, challenging reductionist claims. Conversely, if such a scenario seems inconceivable, this provides support for the supervenience thesis and thus for reductionism. Thought experimental methods have been particularly important in investigating the modal status of the relationship between moral and natural properties—whether this relationship is necessary or contingent, *a priori* or *a posteriori*.

The methodological foundations of moral property reduction must also address tensions between philosophical and scientific methodologies. While naturalistic reductionists emphasize the continuity between philosophy and science, they must also acknowledge the distinctive contributions of philosophical methods like conceptual analysis, thought experimentation, and argumentative reasoning



## 1.4 Major Varieties of Moral Property Reduction

The methodological tensions between philosophical analysis and scientific investigation naturally lead us to examine the specific frameworks through which moral property reduction has been articulated. These frameworks represent distinct philosophical strategies for understanding how moral properties relate to the broader fabric of reality, each offering unique metaphysical commitments and explanatory resources. The major varieties of moral property reduction have emerged from centuries of philosophical reflection, shaped by historical context, scientific developments, and persistent debates about the nature of value and normativity. By examining these varieties in detail, we gain a deeper appreciation for the philosophical creativity and rigor that reductionists have brought to the project of demystifying moral properties while preserving their significance for human life and thought.

Reductive naturalism stands as perhaps the most prominent and systematically developed form of moral property reduction in contemporary philosophy. This approach maintains that moral properties are identical to or constituted by natural properties—properties that can be investigated through the methods of empirical science. Unlike non-reductive naturalism, which holds that moral properties are natural properties but cannot be reduced to more fundamental natural properties, reductive naturalism asserts that moral properties are fully explainable in terms of other natural properties without residual moral elements. The most influential version of reductive naturalism is Cornell realism, developed by philosophers such as Richard Boyd, Nicholas Sturgeon, and David Brink in the 1980s. Cornell realism takes its name from Cornell University, where these philosophers developed their distinctive approach to  $\square \square \square \square \square$ . Boyd's homeostatic property cluster theory provides a sophisticated account of how moral properties like "goodness" or "virtue" can be reduced to clusters of natural properties that tend to co-occur due to their contribution to human flourishing and social cooperation. For example, the property of "being a morally good person" might reduce to a cluster of natural properties including empathy, fairness, cooperativeness, and reliability—traits that have been selected through evolutionary processes and reinforced through social practices because they promote individual and collective well-being. This cluster approach allows for the complexity and context-sensitivity of moral properties while maintaining their reducibility to natural properties.

Cornell realists emphasize that moral properties play a crucial causal role in explaining social phenomena, which provides empirical evidence for their reality and reducibility to natural properties. Nicholas Sturgeon, for instance, argues that the wrongness of slavery helps explain why abolitionists opposed it, suggesting that moral properties are not mere projections but genuine causal factors in human affairs. If moral properties can enter into causal explanations, Sturgeon contends, they must be natural properties, as only natural properties can participate in causal relations within the physical world. This causal argument provides a powerful motivation for reductive naturalism, as it suggests that taking moral properties seriously requires understanding them as natural properties that can interact with other natural properties in the causal order. The reductionist aspect emerges as we investigate which specific natural properties realize moral properties in particular contexts. For utilitarian reductionists like Peter Railton, moral properties reduce to properties that maximize well-being, where well-being itself is understood in naturalistic terms as the satisfaction of informed preferences or the fulfillment of objective human needs. This identification allows moral proper-

ties to be studied through the same empirical methods we use to investigate human well-being, creating a seamless connection between moral inquiry and scientific investigation of human nature and society.

Reductive naturalism also encompasses sophisticated attempts to reduce moral properties to second-order natural properties rather than first-order properties. This approach is particularly evident in utilitarian reductions, where the moral property of “rightness” is identified not with any specific first-order property like pleasure or desire-satisfaction but with the second-order property of “maximizing overall happiness.” J.J.C. Smart’s defense of act-utilitarianism illustrates this approach, arguing that an action is right if and only if it maximizes happiness, where happiness is understood as a natural psychological state. This second-order reduction allows for the possibility that what maximizes happiness might vary across different contexts and societies while maintaining that the property of rightness is always reducible to this consequentialist criterion. Similarly, rule-utilitarian reductions identify moral properties with conformity to rules that, if generally followed, would maximize happiness. Richard Brandt’s rule-utilitarianism, for example, reduces moral properties to properties of actions that conform to rules whose internalization would maximize expectable utility. These utilitarian reductions demonstrate how reductive naturalism can accommodate the apparent diversity of moral phenomena by reducing them to higher-order natural properties that unify seemingly disparate moral judgments under a single naturalistic criterion.

Moving beyond naturalistic frameworks, reductive supernaturalism represents a historically significant though less prominent contemporary approach to moral property reduction. This position maintains that moral properties can be reduced to supernatural properties—properties related to divine nature, commands, or purposes. Unlike naturalistic reductionism, which grounds morality in the natural world, supernaturalist reductionism locates moral properties in a transcendent divine reality. The most developed form of reductive supernaturalism is divine command theory, which reduces moral properties to properties of being commanded or willed by God. Philosophers such as Robert Adams and Philip Quinn have defended sophisticated versions of this view, arguing that moral obligations are constituted by divine commands, making the property of “being morally obligatory” identical to the property of “being commanded by God.” Adams, in his work “Finite and Infinite Goods,” proposes that moral properties are best understood as resembling God’s nature, with the property of “goodness” reducing to the property of “resembling God in relevant respects.” This reductionist approach maintains that moral properties are real and objective but denies that they are fundamental features of reality; instead, they derive their nature and authority from their relationship to divine attributes.

Divine natural law theory offers another form of reductive supernaturalism, reducing moral properties to properties that align with rational nature as created by God. Thomas Aquinas’s systematic theology provides the historical foundation for this approach, arguing that moral properties reduce to properties that fulfill natural inclinations implanted in human beings by God. For Aquinas, the moral law is the rational creature’s participation in the eternal law, making moral properties reducible to properties that perfect human nature in accordance with divine purposes. The property of “being morally right,” on this view, reduces to the property of “acting in accordance with reason as directed toward natural human ends.” This reductionist framework attempts to ground moral objectivity in divine nature while providing a naturalistic element through its focus on human nature and its inherent ends. Contemporary supernaturalist reductionists like Mark Murphy have developed more secularized versions of natural law theory that reduce moral properties to properties that

fulfill basic human goods, while still maintaining a connection to teleological order that reflects divine design.

Reductive supernaturalism faces distinctive philosophical challenges, particularly in contemporary secular contexts where appeals to divine nature may lack persuasive force. However, it remains historically significant and continues to inform theological ethics and religious approaches to morality. The reductionist aspect of supernaturalism is evident in its denial that moral properties are fundamental; instead, they are constituted by more basic supernatural properties. Even within religious thought, this reductionist approach contrasts with non-reductive supernaturalist views that maintain moral properties as irreducible features of divine reality itself. By reducing moral properties to divine commands or natural purposes, reductive supernaturalism attempts to explain moral objectivity and authority while avoiding the metaphysical proliferation of irreducible moral facts.

A more philosophically intriguing and controversial position is reductive non-naturalism, which maintains that moral properties can be reduced to non-natural but non-moral properties. This approach occupies a complex middle ground between naturalism and traditional non-naturalism, rejecting the reduction of moral properties to natural properties while still asserting that moral properties are reducible to more fundamental non-moral properties. The historical roots of this position can be traced to Plato's theory of Forms, where moral properties like justice and goodness were seen as participating in the Form of the Good—a non-natural, non-moral property that served as the foundation of all reality. For Plato, the property of “being just” reduces to the property of “participating in the Form of the Good,” making moral properties dependent on but not identical to this fundamental non-natural property. This Platonic reductionism differs from contemporary non-reductive non-naturalism by maintaining that moral properties are not fundamental but derive their nature from their relationship to the Form of the Good.

Contemporary attempts at reductive non-naturalism are rare but philosophically significant. A.C. Ewing's work in the mid-twentieth century provides one example, suggesting that moral properties might be reduced to non-natural properties of “fittingness” or “appropriateness.” On Ewing's view, the property of “being morally right” reduces to the property of “being fitting to approve,” where this fittingness is a non-natural but non-moral property that obtains between actions and attitudes. This reduction attempts to preserve the objectivity of moral properties while avoiding the metaphysical extravagance of positing irreducibly moral properties. Similarly, some contemporary philosophers have explored whether moral properties might reduce to non-natural properties related to reasons or rationality. For instance, the property of “being morally good” might reduce to the property of “having reasons to favor that are not dependent on desire,” where these reason-giving properties are non-natural but not specifically moral. This approach attempts to ground moral properties in the normative structure of rationality itself, reducing morality to a broader domain of non-natural normative properties.

Reductive non-naturalism faces significant philosophical challenges, particularly in explaining how we could have knowledge of the non-natural properties to which moral properties are supposed to reduce. Unlike natural properties, which we can investigate through empirical methods, non-natural properties seem epistemically inaccessible except through intuition or rational insight. This epistemological problem has led most contemporary philosophers to reject reductive non-naturalism in favor of either naturalistic reductionism

or non-reductive non-naturalism. However, the position remains philosophically interesting for its attempt to navigate between the Scylla of naturalistic reduction and the Charybdis of non-reductive moral realism, offering a distinctive way to understand moral properties as dependent on but not identical to non-moral properties.

Functional reductionism represents a fourth major variety of moral property reduction, drawing inspiration from the philosophy of mind and cognitive science. This approach maintains that moral properties can be reduced to their causal or functional roles rather than to specific realizers of those roles. Developed by philosophers such as David Lewis, Peter Railton, and Frank Jackson, functional reductionism treats moral properties as defined by their causal relationships to other properties, particularly their role in producing certain effects or being produced by certain causes. The key insight is that moral properties are multiply realizable—they can be instantiated by diverse natural properties in different contexts while playing the same functional role. This approach allows for the reduction of moral properties without committing to the claim that all moral properties are identical to the same specific natural properties across all contexts.

David Lewis’s work on moral semantics provides a clear example of functional reductionism. Lewis argues that moral terms refer to the natural properties that occupy certain causal roles in our moral practice. For instance, the term “right” refers to whatever natural property typically causes our moral approval and is typically caused by actions that promote social cooperation. This functional role can be occupied by different natural properties in different societies or contexts, but the moral property of rightness is always reducible to the functional role itself. Lewis’s approach uses the method of Ramsey sentences to specify these functional roles without presupposing which specific natural properties realize them. A Ramsey sentence for a moral term like “good” would replace the term with a variable and existentially quantify over the properties that satisfy the relevant causal role, yielding a specification of “good” as “whatever property plays such-and-such causal role in our moral practice.” This functional specification allows for the reduction of moral properties while accommodating cultural variation and context-sensitivity.

Peter Railton’s reduction of moral properties to properties that would maximize well-being under ideal conditions offers another sophisticated form of functional reductionism. Railton argues that the moral property of “goodness” reduces to the property of “what would promote the agent’s well-being if the agent were fully informed and rational.” This reduction is functional because it defines moral properties by their relationship to idealized conditions of information and rationality rather than by specific natural properties. The actual natural properties that realize goodness in particular cases may vary depending on the agent’s circumstances, but they all play the same functional role of promoting well-being under ideal conditions. This approach allows Railton to maintain a reductionist position while accounting for the apparent objectivity and practical guidance of moral judgments.

Functional reductionism also addresses the multiple realizability objection to moral property reduction, which argues that moral properties can be instantiated by diverse natural properties in different contexts, making reduction to specific natural properties impossible. By reducing moral properties to functional roles rather than specific realizers, functional reductionism accommodates multiple realizability while still maintaining that moral properties are reducible. For example, the property of “being courageous” might be real-

ized by different natural properties in different situations—standing firm in battle, speaking truth to power, or facing a medical diagnosis with grace—but all these realizers play the same functional role of enabling agents to act rightly despite fear. This functional role is what constitutes the moral property of courage, making courage reducible to its functional definition even though its realizers vary.

The four major varieties of moral property reduction—reductive naturalism, reductive supernaturalism, reductive non-naturalism, and functional reductionism—represent distinct philosophical strategies for understanding how moral properties relate to the rest of reality. Each approach offers unique insights and faces distinctive challenges, reflecting the complexity of the metaphysical project of demystifying moral properties while preserving their significance for human life and thought. Reductive naturalism connects morality to the natural world studied by science, reductive supernaturalism grounds morality in divine reality, reductive non-naturalism locates morality in a broader domain of non-natural normativity, and functional reductionism defines morality by its causal roles in human practice. Together, these varieties demonstrate the philosophical richness and diversity of the reductionist tradition in metaethics, showing how reductionists have developed sophisticated frameworks for addressing one of philosophy’s most enduring questions: the nature and status of moral properties themselves. As we turn to examine the key arguments that have been advanced in favor of moral property reduction, we will see how these different varieties of reductionism draw on distinct philosophical resources to support their common commitment to understanding moral properties in terms of more fundamental non-moral properties.

## 1.5 Key Arguments in Favor of Moral Property Reduction

The philosophical commitment to understanding moral properties in terms of more fundamental non-moral properties is not merely a metaphysical preference but finds support in several powerful arguments that have been developed and refined throughout the history of metaethics. These arguments draw on diverse philosophical resources, from principles of rational inquiry to observations about moral practice, and collectively provide a compelling case for taking moral property reduction seriously as a metaethical position. By examining these arguments in detail, we gain insight into why reductionism has maintained such a persistent appeal across different philosophical traditions and historical periods, despite facing significant challenges from alternative approaches.

Arguments from ontological parsimony represent perhaps the most fundamental motivation for moral property reduction, appealing to the principle often attributed to William of Ockham that “entities should not be multiplied without necessity.” This principle, commonly known as Ockham’s razor, has been a cornerstone of rational inquiry across scientific and philosophical domains, favoring theories that posit fewer entities or properties when those theories can explain the phenomena equally well. Applied to moral properties, the argument from parsimony maintains that we should prefer reductionist theories that identify moral properties with already recognized natural or supernatural properties rather than positing additional irreducible moral properties. This argument draws strength from the impressive track record of parsimonious explanations in other domains of inquiry, from the reduction of temperature to mean molecular kinetic energy in physics to the reduction of water to  $H_2O$  in chemistry. In each of these cases, scientists achieved greater explanatory

power and theoretical elegance by showing that apparently distinct phenomena could be understood in terms of more fundamental properties.

In the context of metaethics, J.L. Mackie provides a particularly forceful articulation of the parsimony argument in his influential work “Ethics: Inventing Right and Wrong.” Mackie argues that positing irreducibly moral properties would introduce a metaphysical extravagance that lacks parallel elsewhere in our understanding of the world. If we can explain all moral phenomena without positing additional moral properties, then according to Ockham’s razor, we should do so. The reductionist approach, by contrast, offers a more ontologically parsimonious account by identifying moral properties with properties that we already have independent reason to recognize as real. For example, a utilitarian reductionist can explain moral goodness in terms of happiness or well-being, properties that we can investigate through psychological and sociological methods without introducing new metaphysical categories. Similarly, a divine command theorist can explain moral obligations in terms of divine commands, properties that theists already accept as part of their theological framework. In both cases, the reductionist avoids ontological inflation by making moral properties dependent on more fundamental properties that serve independent explanatory roles.

The relationship between parsimony and other theoretical virtues in metaethics further strengthens the argument for reductionism. Beyond mere economy of entities, parsimonious theories often exhibit greater explanatory power, predictive accuracy, and integration with our broader understanding of the world. Reductionist accounts of moral properties typically offer more detailed explanations of moral phenomena by connecting morality to well-established domains of knowledge. For instance, evolutionary reductionists like E.O. Wilson and Michael Ruse can explain the emergence of moral sentiments through well-understood mechanisms of natural selection, showing how traits like altruism and fairness conferred survival advantages on our ancestors. This evolutionary explanation not only accounts for the existence of moral judgments but also predicts cross-cultural similarities and differences in moral systems, demonstrating how reductionism can enhance explanatory power while maintaining ontological parsimony.

However, objections to parsimony arguments in the moral domain remind us that ontological economy must be balanced against other considerations. Critics like Derek Parfit and T.M. Scanlon argue that moral properties might be *sui generis*—unique and irreducible—precisely because they play a distinctive role in practical reasoning that cannot be captured by non-moral properties alone. On this view, the apparent irreducibility of moral properties might indicate not a failure of our explanatory resources but a genuine feature of moral reality that we must acknowledge. Moreover, some philosophers question whether Ockham’s razor applies straightforwardly to moral properties, suggesting that the principle may be more appropriate for scientific contexts where empirical investigation can confirm or disconfirm the existence of posited entities. In the normative domain, where moral properties are not directly observable but rather encountered through the practical demands of action and evaluation, the argument from parsimony might carry less weight. Despite these objections, the appeal of ontological parsimony continues to motivate reductionist approaches, offering a powerful methodological principle for evaluating competing metaethical theories.

Arguments from causal efficacy provide another compelling foundation for moral property reduction, addressing the fundamental question of how moral properties can interact with the natural world. This argument



begins with the observation that moral properties appear to have causal effects in the world—our moral judgments influence our actions, moral condemnation can change behavior, and moral praise can reinforce virtuous character traits. If moral properties are to participate in these causal processes, the argument continues, they must be reducible to natural properties that can enter into causal relations with other natural properties. This line of reasoning draws strength from the principle of the causal closure of the physical world, which maintains that all physical effects have sufficient physical causes, leaving no room for non-physical properties to exert causal influence unless they are identical to or realized by physical properties.

Nicholas Sturgeon offers a particularly sophisticated development of the causal efficacy argument in his essay “Moral Explanations.” Sturgeon argues that moral properties genuinely figure in our best explanations of various phenomena, including historical events and social practices. For example, the wrongness of slavery helps explain why abolitionists opposed it and why the institution eventually was abolished. If moral properties can play this explanatory role, Sturgeon contends, they must be causally efficacious properties. But if moral properties are causally efficacious, they must be natural properties, as only natural properties can participate in the causal networks described by science. This argument provides a strong motivation for naturalistic reductionism, suggesting that taking moral explanations seriously requires understanding moral properties as natural properties that can interact causally with other natural properties in the world.

The implications of causal exclusion further strengthen the argument from causal efficacy. Jaegwon Kim’s causal exclusion principle maintains that if a physical event has a sufficient physical cause, it cannot also be caused by a non-physical property unless the non-physical property is identical to the physical property. Applied to moral properties, this principle suggests that if our actions (which are physical events) have sufficient physical causes, they cannot also be caused by irreducible moral properties unless those moral properties are identical to the physical properties. This creates a powerful dilemma for non-reductionist views: either moral properties are causally inert “epiphenomena” that merely accompany physical events without influencing them, or they must be reducible to the physical properties that actually cause our actions. The first option seems counterintuitive, as it would mean that our moral judgments never actually influence our behavior, while the second option leads directly to reductionism. This dilemma has led many philosophers, including naturalistically inclined reductionists like Richard Boyd and David Brink, to embrace the reduction of moral properties to natural properties that can exercise genuine causal influence in the world.

Responses to causal efficacy arguments from non-reductionist perspectives typically challenge either the causal closure principle or the assumption that moral properties must be causally efficacious. Some non-naturalists, like Russ Shafer-Landau, argue that moral properties might be causally efficacious in a distinctive non-physical way that does not violate the causal closure of the physical world. Others, like Christine Korsgaard, suggest that moral properties might not cause actions in the same way that physical properties do but rather provide reasons for actions that agents can recognize and respond to through rational reflection. However, these responses face significant challenges in explaining how non-natural moral properties can interact with physical agents to influence behavior without violating well-established principles of causation. The difficulty of providing a plausible account of how irreducible moral properties could exercise causal influence continues to motivate many philosophers to embrace reductionist approaches that locate moral properties within the causal structure of the natural world.

Arguments from supervenience offer a third major line of support for moral property reduction, building on the widely accepted principle that moral properties supervene on natural properties. The supervenience thesis, first systematically applied to ethics by R.M. Hare in “The Language of Morals,” holds that there cannot be a difference in moral properties without a corresponding difference in natural properties—two actions or states of affairs that are identical in all natural respects must also be identical in all moral respects. This supervenience relation seems intuitively compelling: we cannot imagine two actions that are identical in every natural respect (their consequences, the agent’s motives, the circumstances, etc.) but differ in their moral status, with one being right and the other wrong. If such a scenario seems inconceivable, as most philosophers agree it does, then moral properties must supervene on natural properties.

The argument for reductionism from supervenience maintains that the best explanation for why moral properties supervene on natural properties is that moral properties are reducible to natural properties. If moral properties were entirely distinct from natural properties, the argument goes, their necessary connection would remain a mysterious brute fact without explanation. Reductionism, by contrast, provides a straightforward explanation for supervenience: if moral properties are identical to or constituted by natural properties, then it is no surprise that they cannot vary independently of those natural properties. Just as the property of being water supervenes on the property of being  $H_2O$  because water is  $H_2O$ , moral properties supervene on natural properties because moral properties are (reducible to) natural properties. This explanatory argument, developed by philosophers like Simon Blackburn and David Brink, suggests that reductionism offers the most satisfying account of the intimate connection between moral and natural properties that the supervenience thesis captures.

Different forms of supervenience further strengthen this argument by clarifying the precise relationship between moral and natural properties. Strong supervenience holds that for any possible world and any individuals in that world, if those individuals are identical in all natural properties, they must also be identical in all moral properties. This modal strength goes beyond mere actual-world correlation, suggesting a necessary connection between moral and natural properties that reductionism can easily explain. Weak supervenience, by contrast, holds only that within any single possible world, individuals identical in all natural properties must also be identical in all moral properties, allowing for the possibility that the same natural properties might realize different moral properties in different possible worlds. While weak supervenience places fewer demands on reductionist theories, strong supervenience provides even stronger support for reductionism by suggesting that the connection between moral and natural properties is not merely contingent but necessary, as would be expected if moral properties are reducible to natural properties.

The relationship between supervenience and reductionism is further illuminated by considering supervenience as an explanatory relation rather than merely a correlation. As Jaegwon Kim has argued, supervenience by itself is a relation of covariation without explanation—it tells us that moral properties cannot vary independently of natural properties but does not tell us why this is the case. Reductionism provides the missing explanation by identifying moral properties with or grounding them in natural properties, thereby making the supervenience relation intelligible. This explanatory advantage gives reductionism a significant edge over non-reductionist views that must accept moral supervenience as a brute fact. For example, a utilitarian reductionist can explain why the moral property of rightness supervenes on the natural property of



maximizing happiness—because rightness just is the property of maximizing happiness. A non-reductionist, by contrast, must accept that the property of rightness necessarily supervenes on the property of maximizing happiness without being able to explain why this necessary connection holds, leaving the supervenience relation mysterious and unexplained.

Challenges to supervenience arguments for reductionism typically focus on whether reductionism is the only plausible explanation for moral supervenience. Some non-reductionists, like Derek Parfit, argue that moral properties might supervene on natural properties because of conceptual or normative connections rather than metaphysical identity. On this view, the necessary connection between moral and natural properties might be explained by the nature of moral concepts or the demands of practical reason rather than by the reduction of moral properties to natural properties. Other philosophers, such as Terence Cuneo, have questioned whether the supervenience thesis itself is as secure as reductionists assume, suggesting that there might be cases where moral properties do not strictly supervene on natural properties. However, these responses face difficulties in providing alternative explanations for the apparent necessity of the connection between moral and natural properties that seem as compelling as the reductionist explanation. The intuitive appeal of the supervenience thesis, combined with the explanatory power of reductionism in accounting for it, continues to make arguments from supervenience a significant motivation for moral property reduction.

Arguments from moral progress and disagreement provide a fourth major line of support for reductionism, drawing on observations about how moral judgments change over time and vary across cultures. This argument begins with the recognition that moral discourse exhibits patterns of progress and disagreement that parallel developments in other domains of inquiry. For example, most people would agree that there has been moral progress in the abolition of slavery, the expansion of voting rights, and the advancement of gender equality. Similarly, moral disagreements between cultures and individuals often seem to be resolvable through rational dialogue and increased information, much like disagreements in scientific or factual domains. Reductionism offers a natural explanation for these phenomena by connecting moral properties to natural properties that can be investigated through empirical methods and rational inquiry.

Peter Railton provides a particularly sophisticated development of this argument in his work on naturalistic realism. Railton argues that if moral properties reduce to natural properties like well-being or social cooperation, then moral progress can be understood as our increasing knowledge of these natural properties and their relationships. Just as scientific progress involves discovering more accurate descriptions of natural phenomena, moral progress involves discovering which actions and institutions best promote the natural properties that constitute moral value. The abolition of slavery, for instance, can be seen as moral progress because we discovered that slavery fails to promote human well-being and social cooperation, the natural properties that realize moral goodness. Similarly, moral disagreements can be resolved through empirical investigation and rational dialogue about which actions best realize these natural properties. This reductionist account explains why moral progress and disagreement exhibit patterns similar to those in scientific domains—because both involve increasing knowledge of natural properties and their relationships.

The reductionist account of moral disagreement and resolution further strengthens this argument. When people disagree about moral questions, the reductionist suggests that they are typically disagreeing either

about empirical facts (which action will actually promote well-being) or about the application of moral principles to particular cases. These disagreements can be resolved through the same methods we use to resolve disagreements in other domains—gathering more information, clarifying concepts, and examining the logical implications of different positions. For example, disagreements about the morality of capital punishment might be resolved through empirical investigation of its deterrent effects, its impact on society, and its relationship to human dignity, all of which are natural properties that can be studied through social scientific methods. This account explains why moral disagreements seem tractable and resolvable in a way that would be surprising if moral properties were entirely disconnected from natural properties.

The relationship between reductionism and cross-cultural moral judgments provides additional support for this argument. Reductionism can explain both the significant similarities and the important differences in moral systems across cultures. Similarities arise because all human societies face similar natural challenges and needs, leading to convergence on moral practices that promote well-being and social cooperation. Differences arise because different cultures have developed different strategies for addressing these challenges, based on their particular histories, environments, and technologies. This reductionist account explains why we can meaningfully evaluate moral practices across cultures (by assessing their relationship to natural properties like well-being) while also acknowledging the legitimate diversity of moral systems (by recognizing that different natural properties might realize moral value in different contexts). For example, we can criticize practices like female genital mutilation across cultures by showing how they undermine well-being, while recognizing that different cultures might legitimately adopt different approaches to promoting well-being based on their particular circumstances.

Objections to these arguments from non-reductionist perspectives typically challenge whether reductionism can

## 1.6 Major Criticisms and Objections to Moral Property Reduction

Alright, I need to write Section 6 of this Encyclopedia Galactica article on “Moral Property Reduction,” focusing on the major criticisms and objections to this philosophical position. Let me analyze the requirements:

1. The section should cover four main subsections:
  - 6.1 The Open Question Argument
  - 6.2 The Argument from Queerness
  - 6.3 The Normativity Objection
  - 6.4 The Multiple Realizability Objection
2. I need to build naturally upon the previous content, which ended with a discussion about arguments from moral progress and disagreement in favor of moral property reduction, and mentioned objections to these arguments from non-reductionist perspectives.

3. I should maintain the same authoritative yet engaging style as the previous sections, with rich detail, specific examples, and flowing narrative prose.
4. I should avoid bullet points and instead weave information into flowing paragraphs.
5. I should write approximately the target word count for this section (though the target isn't specified in the prompt).
6. I should end with a transition that leads to the next section.

Let me start drafting the section, beginning with a smooth transition from the previous section and then covering each of the four objections in detail.

For the transition, I'll note that while the previous section discussed arguments in favor of moral property reduction, this section will examine the principal challenges that have been raised against it.

For each subsection, I'll need to: - Explain the objection in detail - Discuss its historical development and key proponents - Analyze how it targets reductionist definitions of moral properties - Consider reductionist responses to the objection - Explore contemporary reformulations and implications

Let me begin writing:

## Section 6: Major Criticisms and Objections to Moral Property Reduction

[Transition from previous section] Objections to these arguments from non-reductionist perspectives typically challenge whether reductionism can adequately capture the nature of moral progress and disagreement without distorting their essential character. These challenges represent merely the beginning of a broader critique of moral property reduction that has developed throughout the history of metaethics. While the previous section examined the powerful arguments that support moral property reduction, we must now turn our attention to the equally compelling objections that have been raised against this position. These criticisms probe the fundamental assumptions of reductionist approaches, challenging their ability to capture the distinctive nature of moral properties and their role in human thought and practice. By examining these objections in detail, we gain a more balanced understanding of the debate surrounding moral property reduction and the philosophical challenges that reductionists must address to defend their position.

**6.1 The Open Question Argument** The Open Question Argument, first systematically formulated by G.E. Moore in his 1903 work "Principia Ethica," stands as perhaps the most influential and persistent challenge to moral property reduction in the twentieth century. Moore's argument targets the very possibility of defining moral properties in terms of natural or supernatural properties, suggesting that any such definition must fail because it will always be an "open question" whether the property identified in the definition actually possesses the moral property in question. This argument has shaped metaethical debate for over a century, forcing reductionists to develop increasingly sophisticated responses to its powerful challenge.

Moore's original formulation of the argument begins with his famous "naturalistic fallacy," which he defines as the attempt to define the moral property of "good" in terms of some natural property. Moore argues that

“good” denotes a simple, unanalyzable, non-natural property, much like “yellow” denotes a simple, unanalyzable property. Just as we cannot define “yellow” to someone who has never experienced it by describing its physical properties, Moore contends that we cannot define “good” by describing natural properties. To illustrate this point, Moore considers various proposed definitions of “good” in terms of natural properties and shows that for each definition, it remains an open question whether the natural property in question is actually good. For example, if someone defines “good” as “pleasant,” Moore argues that we can still meaningfully ask, “Is pleasure good?” Similarly, if “good” is defined as “what we desire to desire,” we can still ask, “Is what we desire to desire actually good?” The fact that these questions remain meaningful and non-trivial, Moore concludes, shows that “good” cannot mean the same as any natural property.

The philosophical significance of the Open Question Argument extends beyond its specific application to definitions of “good.” More fundamentally, Moore’s argument challenges the reductionist project by suggesting that moral concepts have a normative dimension that cannot be captured by purely descriptive concepts. When we define “good” in terms of a natural property like pleasure or desire-satisfaction, we are attempting to reduce a normative concept to a descriptive concept, but the persistent “openness” of the question whether the descriptive property is actually good reveals that this reduction must fail. The normative force of moral concepts—their ability to guide action and evaluate states of affairs—cannot be fully captured by descriptive concepts alone, according to Moore. This insight has influenced generations of philosophers who argue that moral properties possess an irreducibly normative aspect that distinguishes them from natural properties.

The Open Question Argument has undergone numerous reformulations and refinements since Moore first introduced it. One important development is the distinction between semantic and metaphysical versions of the argument. The semantic version, which Moore himself primarily advanced, focuses on the meaning of moral terms and whether they can be defined in non-moral terms. The metaphysical version, developed by philosophers like Derek Parfit, focuses on the nature of moral properties themselves and whether they can be identical to or constituted by natural properties, regardless of whether this identity is captured by semantic analysis. This distinction has allowed the Open Question Argument to remain relevant even as reductionist theories have evolved from simple definitional accounts to more sophisticated metaphysical identifications.

Another significant development is the recognition that the Open Question Argument may have different force against different types of reductionist definitions. Analytic reductions, which claim that moral terms can be analyzed into descriptive components that are knowable a priori, seem particularly vulnerable to the argument. For example, if “right” is analytically defined as “maximizing happiness,” then the question “Is maximizing happiness right?” should be trivial and uninformative, yet it does not seem trivial to most people. Synthetic reductions, by contrast, claim that moral properties are identical to natural properties but that this identity is not knowable through conceptual analysis alone—much like the identity of water and  $H_2O$  was discovered through empirical investigation rather than conceptual reflection. This distinction has allowed reductionists like Richard Boyd and Peter Railton to develop more sophisticated responses to the Open Question Argument by embracing a synthetic rather than analytic approach to moral property reduction.

Reductionist responses to the Open Question Argument have taken several forms, each reflecting different

philosophical strategies for addressing Moore's challenge. One response, developed by philosophers like Frank Jackson, acknowledges that moral terms may not be analytically reducible to descriptive terms but maintains that they refer to natural properties that play the appropriate causal and functional roles in our moral practices. On this view, the Open Question Argument mistakenly assumes that moral meaning must be transparent to conceptual reflection, when in fact moral terms may refer to natural properties that are not immediately obvious to ordinary speakers. Just as "water" referred to  $H_2O$  long before scientists discovered this identity, moral terms like "good" may refer to natural properties that we have not yet fully identified through empirical investigation. This response preserves reductionism while acknowledging the force of Moore's insight about the apparent openness of moral questions.

Another important response, developed by Cornell realists like Richard Boyd, argues that the reference of moral terms is determined by their causal role in regulating social practices rather than by conceptual analysis. For Boyd, moral terms function as theoretical terms in a moral theory that explains social phenomena, and their reference is fixed by the causal relationships between these terms and the properties they denote. This causal theory of moral reference allows reductionists to maintain that moral terms refer to natural properties even if speakers are not fully aware of which natural properties their terms refer to. The Open Question Argument, on this view, fails because it mistakenly assumes that moral meaning must be captured by conceptual analysis rather than causal relations.

A third response, advanced by philosophers like David Lewis, uses the method of Ramsey sentences to specify moral properties without presupposing which specific natural properties realize them. A Ramsey sentence for a moral term like "good" would replace the term with a variable and existentially quantify over the properties that satisfy the relevant causal role, yielding a specification of "good" as "whatever property plays such-and-such causal role in our moral practice." This functional specification allows reductionists to define moral properties in terms of their causal roles without committing to specific natural property identifications, thereby avoiding the Open Question Argument's challenge to definitional reductions.

Contemporary reformulations of the Open Question Argument continue to challenge reductionist approaches by focusing on the normative dimension of moral concepts. Philosophers like Derek Parfit and T.M. Scanlon argue that moral concepts have an irreducibly normative aspect that cannot be captured by purely descriptive concepts, even when those concepts are specified through causal roles or functional definitions. For example, the concept of "reason" has a normative dimension that cannot be reduced to descriptive properties of psychological states, and similarly, moral concepts like "good" and "right" have a normative dimension that cannot be reduced to natural properties. This contemporary version of the Open Question Argument suggests that even sophisticated reductionist accounts may fail to capture the essential normativity of moral concepts and properties.

The enduring significance of the Open Question Argument lies in its challenge to reductionism to account for the distinctive character of moral thought and discourse. While reductionists have developed increasingly sophisticated responses to Moore's original formulation, the argument continues to raise profound questions about whether moral properties can be fully understood in terms of non-moral properties without losing their essential normative character. As we turn to examine the Argument from Queerness, we will see how this

challenge to reductionism is complemented by another powerful objection that questions the very intelligibility of moral properties within a naturalistic worldview.

**6.2 The Argument from Queerness** The Argument from Queerness, presented by J.L. Mackie in his influential 1977 work “Ethics: Inventing Right and Wrong,” offers a metaethical challenge to moral realism that has significant implications for moral property reduction. While Mackie’s argument primarily targets non-reductive moral realism, it also poses a serious challenge to reductionist accounts that attempt to preserve moral objectivity within a naturalistic framework. The argument suggests that moral properties, if they existed, would be radically different from anything else in the universe, making their existence metaphysically and epistemologically “queer” or peculiar. This challenge forces reductionists to explain how moral properties can fit within a naturalistic worldview without exhibiting the queerness that Mackie identifies.

Mackie’s argument has two main components: a metaphysical component and an epistemological component. The metaphysical component begins with the observation that moral properties would have to be very strange sorts of entities if they existed. According to Mackie, moral properties would be unlike anything else in the universe because they would possess a unique “to-be-pursuedness” or “not-to-be-done-ness” that is built into their very nature. For example, if an action is morally wrong, it would somehow contain a built-in reason not to perform it—a reason that exists objectively and independently of human desires, conventions, or practices. This objective prescriptivity, as Mackie calls it, would make moral properties fundamentally different from natural properties, which do not contain built-in reasons for action. A natural property like “being painful” might give us a reason to avoid something, but this reason depends on our desires and attitudes rather than being built into the property itself. Moral properties, by contrast, would supposedly provide reasons for action regardless of our desires or attitudes, making them metaphysically queer entities within a naturalistic worldview.

The epistemological component of Mackie’s argument focuses on how we could know about moral properties if they existed. If moral properties are radically different from natural properties, Mackie argues, then we would need a special faculty of moral intuition or perception to detect them—a faculty that would itself be queer or peculiar. Unlike our familiar sensory faculties, which allow us to detect natural properties through causal interaction, this supposed moral faculty would have to detect moral properties without any causal mechanism, since moral properties (on Mackie’s view) cannot causally interact with our sensory organs. The existence of such a faculty would be surprising from an evolutionary perspective, as there is no obvious reason why natural selection would have equipped us with the ability to detect queer metaphysical entities that have no causal impact on our survival or reproduction. This epistemological queerness, Mackie suggests, provides additional reason to be skeptical about the existence of moral properties.

Mackie’s argument has significant implications for moral property reduction. While reductionists attempt to show that moral properties are not queer but are rather natural or supernatural properties that fit within our broader understanding of reality, Mackie’s argument challenges whether any account of moral properties can avoid queerness. Reductionists who identify moral properties with natural properties must explain how these natural properties can possess the objective prescriptivity that moral judgments seem to express. If moral properties are natural properties, then they cannot have built-in reasons for action, since natural properties



do not possess this feature. This creates a challenge for reductionists to explain why moral judgments seem to express objective reasons for action if moral properties are merely natural properties without built-in prescriptivity.

Reductionist responses to the Argument from Queerness have taken several forms, each reflecting different strategies for addressing Mackie's challenge. One response, developed by naturalistic reductionists like Peter Railton and David Brink, acknowledges that moral properties do not have built-in prescriptivity but maintains that they can still provide objective reasons for action in a different way. On this view, moral properties are natural properties that relate to our needs and interests as human beings, and they provide reasons for action because we have reason to care about these natural properties. For example, if the moral property of "goodness" reduces to the natural property of "promoting well-being," then actions that are good provide reasons for action because we have reason to promote well-being, not because goodness itself contains a built-in reason. This response attempts to avoid metaphysical queerness by locating the source of normativity in human needs and interests rather than in the intrinsic nature of moral properties.

Another important response, developed by Cornell realists like Richard Boyd, argues that Mackie mistakenly assumes that moral properties must have built-in prescriptivity to be genuinely normative. For Boyd, moral properties are natural properties that play a causal role in explaining social phenomena, and their normative force comes from their role in regulating social practices that promote human flourishing. This causal role gives moral properties their normative significance without requiring them to have built-in prescriptivity. On this view, the queerness that Mackie identifies is not a feature of moral properties themselves but rather a mistaken assumption about what moral properties would have to be like to be genuinely normative.

A third response, advanced by supernaturalist reductionists like Robert Adams, argues that moral properties can avoid queerness by being reduced to supernatural properties that are not queer within a theistic worldview. For example, if moral properties reduce to divine commands or attributes, then their normative force comes from God's nature or will rather than from built-in prescriptivity. This approach avoids Mackie's challenge by locating the source of normativity in divine reality rather than in the intrinsic nature of moral properties. However, this response is only available to those who accept a theistic worldview, making it less appealing to secular philosophers.

The Argument from Queerness has also prompted reductionists to develop more sophisticated accounts of the relationship between moral properties and reasons for action. Philosophers like David Copp have argued that moral properties are social constructs that provide reasons for action because of their role in social coordination and cooperation. On this view, moral properties are natural properties of social practices, and they provide reasons for action because we have reason to participate in these social practices. This constructivist approach attempts to explain the normativity of moral properties without positing queer metaphysical entities.

Contemporary developments of the Argument from Queerness have focused on the challenge of explaining the normative dimension of moral properties within a naturalistic framework. Philosophers like Sharon Street and Mark Schroeder have argued that even if moral properties are natural properties, reductionists still face the challenge of explaining why these natural properties should matter to us—why they should

provide reasons for action. This challenge is particularly acute for evolutionary reductionists, who must explain why moral properties that evolved because they enhanced reproductive fitness should still provide reasons for action in contemporary environments that are very different from our evolutionary past. If moral properties are merely natural properties that evolved to serve biological functions, why should we care about them when they conflict with our current interests and desires?

The enduring significance of the Argument from Queerness lies in its challenge to reductionism to provide a plausible account of moral normativity within a naturalistic framework. While reductionists have developed various strategies for addressing Mackie's concerns, the argument continues to raise profound questions about whether moral properties can be fully naturalized without losing their distinctive normative character. As we turn to examine the Normativity Objection, we will see how this challenge to reductionism is further developed through a more direct focus on the irreducibly normative aspects of moral properties and their implications for reductionist accounts.

**6.3 The Normativity Objection** The Normativity Objection represents a focused challenge to moral property reduction that builds upon insights from both the Open Question Argument and the Argument from Queerness. While the Open Question Argument emphasizes the semantic gap between moral and non-moral concepts, and the Argument from Queerness questions the metaphysical status of moral properties, the Normativity Objection directly targets the practical dimension of moral judgments—their capacity to guide action and provide reasons for conduct. This objection argues that moral properties have an irreducibly normative aspect that cannot be captured by reductionist accounts, which typically focus on the descriptive rather than the practical dimensions of moral phenomena. The Normativity Objection thus challenges reductionism at its core, questioning whether it can account for the essential action-guiding nature of morality.

The Normativity Objection begins with the observation that moral judgments are fundamentally practical in nature—they do not merely describe states of affairs but also evaluate them and guide action. When we judge that an action is morally right or wrong, we are not simply categorizing it but also expressing a commitment to acting (or not acting) in certain ways. This practical dimension of moral judgments seems to be intimately connected to the nature of moral properties themselves. If an action has the property of being morally right, this property seems to provide a reason for performing the action—a reason that is not merely hypothetical (dependent on our desires) but categorical (applying regardless of our desires). The challenge for reductionism is to explain how moral properties, if they are merely natural or supernatural properties, can provide this distinctive kind of reason for action.

One influential formulation of the Normativity Objection comes from Christine Korsgaard, who argues that moral properties have a normative force that cannot be reduced to natural properties because natural properties cannot explain why we should care about them. For Korsgaard, the normative force of moral properties comes from



## 1.7 Moral Property Reduction and Other Metaethical Positions

I need to write Section 7 of this Encyclopedia Galactica article on “Moral Property Reduction.” The section should focus on how moral property reduction relates to other metaethical positions. Let me analyze what I need to do:

1. The section should cover four subsections:
  - 7.1 Reductionism vs. Non-Reductive Naturalism
  - 7.2 Reductionism vs. Non-Naturalism
  - 7.3 Reductionism vs. Expressivism and Non-Cognitivism
  - 7.4 Reductionism vs. Error Theory
2. I need to build naturally upon the previous content. Section 6 ended with the Normativity Objection, which challenges reductionism to account for the normative dimension of moral properties. I should create a smooth transition from this discussion.
3. I should maintain the same authoritative yet engaging style as the previous sections, with rich detail, specific examples, and flowing narrative prose.
4. I should avoid bullet points and instead weave information into flowing paragraphs.
5. I should write approximately the target word count for this section (though the target isn’t specified in the prompt).
6. I should end with a transition that leads to the next section, which is Section 8 on “Scientific Approaches to Moral Property Reduction.”

Let me start drafting the section, beginning with a smooth transition from the previous section and then covering each of the four comparisons in detail.

For the transition, I’ll note that while the previous section examined major criticisms and objections to moral property reduction, this section will situate reductionism within the broader landscape of metaethical positions, examining how it compares to alternative views.

For each subsection, I’ll need to: - Define the opposing metaethical position - Explain its core commitments - Examine the debate between reductionists and proponents of the alternative view - Analyze the key points of contention - Consider whether reductionism or the alternative view better addresses particular philosophical challenges - Explore any attempts at synthesis or reconciliation

Let me begin writing:

### Section 7: Moral Property Reduction and Other Metaethical Positions

[Transition from previous section] The Normativity Objection thus presents a profound challenge to moral property reduction, questioning whether reductionist accounts can capture the essential action-guiding nature of morality without losing sight of what makes moral judgments distinctively normative. This challenge,

however, does not exist in isolation but emerges from the broader landscape of metaethical positions that offer alternative ways of understanding moral properties and their relationship to the rest of reality. To fully appreciate the significance of moral property reduction and evaluate its philosophical merits, we must situate it within this broader metaethical context, examining how it compares to and contrasts with alternative approaches to moral metaphysics, semantics, and epistemology. By exploring these relationships, we gain a more nuanced understanding of what distinguishes reductionism from other metaethical positions and what philosophical considerations might lead us to embrace or reject reductionism in favor of alternative approaches.

### 7.1 Reductionism vs. Non-Reductive Naturalism

The distinction between reductionist and non-reductive naturalism represents one of the most significant fault lines within contemporary naturalistic metaethics. While both positions share a commitment to naturalism—the view that moral properties are in some sense natural properties—they differ fundamentally in how they understand the relationship between moral properties and other natural properties. Non-reductive naturalism, as developed by philosophers like David Wiggins, John McDowell, and Lynne Baker, maintains that moral properties are natural properties but cannot be reduced to or identified with other natural properties. This position occupies a middle ground between reductionist naturalism and non-naturalism, attempting to preserve the distinctiveness of moral properties while still locating them within the natural world.

To appreciate the debate between reductionist and non-reductive naturalists, we must first understand the core commitments of non-reductive naturalism. Non-reductive naturalists argue that moral properties are natural properties in the sense that they are instantiated in the natural world and can be studied through empirical methods. However, they deny that moral properties can be fully explained in terms of other natural properties or identified with specific natural properties like pleasure, desire-satisfaction, or evolutionary fitness. Instead, non-reductive naturalists typically maintain that moral properties are emergent properties that arise from complex configurations of other natural properties but cannot be reduced to those properties. For example, the property of “being just” might be a natural property that emerges from certain configurations of social relations, individual dispositions, and institutional structures, but it cannot be identified with any specific natural property or set of properties. This emergentist approach allows non-reductive naturalists to acknowledge the naturalness of moral properties while preserving their distinctiveness.

The debate between reductionist and non-reductive naturalists often centers on the concept of supervenience and its implications for reduction. Both positions accept the supervenience thesis—that there cannot be a difference in moral properties without a corresponding difference in natural properties—but they interpret this thesis differently. Reductionist naturalists typically argue that the best explanation for supervenience is that moral properties are identical to or constituted by natural properties. For example, a utilitarian reductionist might argue that the moral property of rightness supervenes on the natural property of maximizing happiness because rightness just is the property of maximizing happiness. Non-reductive naturalists, by contrast, argue that supervenience does not entail reduction. They maintain that moral properties might supervene on natural properties without being reducible to them, much as mental properties might supervene on physical properties without being reducible to them according to some philosophers of mind.

Another key point of contention between reductionist and non-reductive naturalists concerns the explanation of moral knowledge and moral motivation. Reductionist naturalists typically argue that their position offers a more straightforward account of how we can know moral facts and why moral judgments motivate us. If moral properties are natural properties, then we can know them through the same methods we use to know other natural properties—observation, experimentation, inference to the best explanation, and so forth. Similarly, if moral properties are natural properties that relate to our desires and well-being, then it is easier to explain why moral judgments motivate us. Non-reductive naturalists, by contrast, face the challenge of explaining how we can have knowledge of emergent moral properties that cannot be identified with more basic natural properties, and why these properties would motivate us if they are not reducible to properties that connect with our desires or well-being.

The work of David Wiggins provides a particularly sophisticated development of non-reductive naturalism and highlights the differences between this position and reductionist naturalism. In his book “Ethics: Twelve Lectures on the Philosophy of Morality,” Wiggins argues that moral properties are natural properties that are “response-dependent” in a way that preserves their normative force without reducing them to non-normative properties. For Wiggins, moral properties are natural properties that would elicit favorable responses from suitably placed and qualified observers under ideal conditions. This response-dependence account attempts to locate moral properties within the natural world while preserving their normative dimension. However, Wiggins insists that this account does not reduce moral properties to the responses they elicit or to the natural properties that typically cause those responses. Instead, moral properties are distinct natural properties that are essentially related to human responses without being reducible to them.

Reductionist naturalists have raised several objections to non-reductive naturalism. One objection, developed by philosophers like Frank Jackson and Peter Railton, argues that non-reductive naturalism violates the principle of parsimony by positing additional properties that are not needed to explain moral phenomena. If moral properties supervene on natural properties and can be explained in terms of those properties, then according to Ockham’s razor, we should prefer the reductionist account that identifies moral properties with natural properties rather than positing additional emergent moral properties. This objection parallels arguments in philosophy of mind against non-reductive physicalism, suggesting that emergent properties are metaphysically extravagant and scientifically unnecessary.

Another objection, advanced by reductionists like Richard Boyd, argues that non-reductive naturalism cannot adequately explain the causal efficacy of moral properties. If moral properties are emergent properties that cannot be reduced to natural properties, then it becomes difficult to explain how they can causally influence our behavior and social practices. The principle of causal exclusion suggests that if physical events have sufficient physical causes, they cannot also be caused by emergent properties that are not reducible to physical properties. This creates a challenge for non-reductive naturalists to explain how moral properties can play a causal role in explaining our actions and social institutions without being reducible to causal properties.

Non-reductive naturalists have responded to these objections with sophisticated defenses of their position. John McDowell, for example, argues that the demand for reduction is based on a mistaken conception of naturalism that limits the natural to the non-normative. In his essay “Two Sorts of Naturalism,” McDowell

develops a conception of “second nature” that allows for natural properties that are irreducibly normative. On this view, human beings have a “second nature” that includes capacities for rational and moral perception, and moral properties are natural properties in the sense that they are perceptible to beings with this second nature. This expanded conception of naturalism allows McDowell to maintain that moral properties are natural properties without reducing them to non-normative properties.

Lynne Baker offers another defense of non-reductive naturalism, arguing that emergent properties are not metaphysically extravagant but are a common feature of the natural world. In her work on metaphysics, Baker points to examples of emergent properties in science, such as the liquidity of water or the consciousness of living organisms, to show that emergence is a respectable metaphysical relation that does not violate parsimony. Similarly, she argues, moral properties might emerge from natural properties without being reducible to them, and this emergence does not make them any less natural or real.

The debate between reductionist and non-reductive naturalism thus raises profound questions about the nature of naturalism and the relationship between moral properties and other natural properties. While reductionist naturalism offers a more parsimonious account that integrates moral properties more seamlessly with our scientific understanding of the world, non-reductive naturalism attempts to preserve the distinctiveness of moral properties and their normative dimension. The choice between these positions ultimately depends on one’s conception of naturalism and the importance one assigns to preserving the distinctiveness of moral properties. As we turn to examine the relationship between reductionism and non-naturalism, we will see how this debate is further complicated by positions that reject naturalism altogether while still maintaining the reality of moral properties.

## 7.2 Reductionism vs. Non-Naturalism

The debate between moral property reductionism and non-naturalism represents one of the most fundamental divisions in metaethics, pitting two contrasting views of moral metaphysics against each other. While reductionism maintains that moral properties can be understood in terms of more fundamental non-moral properties, non-naturalism holds that moral properties are *sui generis*—unique and irreducible features of reality that cannot be explained in terms of anything else. This debate touches on core questions about the nature of reality, the limits of human understanding, and the place of value in the universe, making it one of the most philosophically rich and enduring controversies in metaethics.

Non-naturalism, as a metaethical position, has its roots in the intuition that moral properties are fundamentally different from the properties studied by the natural sciences. This intuition was given its most influential expression by G.E. Moore in “*Principia Ethica*,” where Moore argued that the property of goodness is a simple, unanalyzable, non-natural property that cannot be defined in terms of natural properties. For Moore, moral properties are non-natural in the sense that they are not part of the spatiotemporal world studied by physics, chemistry, and biology, but are instead abstract properties that exist independently of the natural world. This view was further developed by philosophers like W.D. Ross, H.A. Prichard, and Derek Parfit, who all maintained that moral properties are irreducible features of reality that can be apprehended through rational intuition or reflection.

The core commitment of non-naturalism is that moral properties cannot be reduced to natural properties

because they possess a normative dimension that natural properties lack. Natural properties, on this view, can tell us what is the case but not what ought to be the case—they can describe the world but not evaluate it. Moral properties, by contrast, are inherently normative—they tell us not just how things are but how they ought to be. This normative dimension, according to non-naturalists, cannot be captured by any description of natural properties, no matter how complex or sophisticated. For example, even if we could describe all the natural properties of an action—its consequences, the agent’s motives, the circumstances in which it was performed, and so on—we would still not have captured its moral properties, which tell us whether the action is right or wrong, good or bad.

The debate between reductionists and non-naturalists centers on several key issues, including the nature of moral properties, the possibility of moral knowledge, and the relationship between moral and natural properties. One central point of contention concerns the explanation of moral supervenience. Both reductionists and non-naturalists accept that moral properties supervene on natural properties—there cannot be a difference in moral properties without a corresponding difference in natural properties—but they offer different explanations of this supervenience relation. Reductionists argue that the best explanation for supervenience is that moral properties are identical to or constituted by natural properties. Non-naturalists, by contrast, argue that supervenience is a brute fact about moral properties—they necessarily supervene on natural properties, but this necessity cannot be explained by reducing moral properties to natural properties. For non-naturalists like Derek Parfit, this supervenience relation is a fundamental feature of reality that we must accept but cannot further explain.

Another key point of contention concerns moral epistemology—the question of how we can know moral facts if they are non-natural properties. Reductionists typically argue that their position offers a more plausible account of moral knowledge. If moral properties are natural properties, then we can know them through the same methods we use to know other natural properties—observation, experimentation, inference to the best explanation, and so forth. Non-naturalists, by contrast, face the challenge of explaining how we can have knowledge of non-natural moral properties that are not accessible through ordinary empirical methods. The traditional non-naturalist response, developed by philosophers like W.D. Ross and H.A. Prichard, is that we know moral facts through rational intuition or self-evident moral principles. However, this response raises questions about the reliability of moral intuition and why we should trust its deliverances, especially when people’s moral intuitions often conflict.

The work of Derek Parfit provides a particularly sophisticated contemporary defense of non-naturalism and highlights the differences between this position and reductionism. In his monumental work “On What Matters,” Parfit argues that there are irreducibly normative truths that cannot be explained in terms of natural properties. For Parfit, these normative truths are not causally efficacious in the natural world but are still objectively real and can provide reasons for action. This view, which Parfit calls “non-naturalist cognitivism,” maintains that moral properties are non-natural properties that we can know through rational reflection rather than empirical investigation. Parfit argues that this position better captures the normativity of moral judgments than reductionist accounts, which he believes cannot fully explain why moral properties provide reasons for action.

Reductionists have raised several powerful objections to non-naturalism, many of which were anticipated by J.L. Mackie in his “Argument from Queerness.” One objection is that non-naturalism posits a metaphysically extravagant ontology that includes a whole realm of non-natural properties in addition to the natural properties studied by science. This ontological inflation, according to reductionists, violates the principle of parsimony and makes non-naturalism less attractive than reductionist accounts that do not posit additional properties. Another objection is that non-naturalism cannot provide a plausible account of how non-natural moral properties could interact with the natural world. If moral properties are not part of the spatiotemporal causal order, then it is difficult to explain how they could influence our behavior or how we could have knowledge of them. This epistemological challenge, as developed by Mackie and others, suggests that non-naturalism requires a mysterious faculty of moral intuition that lacks adequate explanation.

Non-naturalists have responded to these objections with sophisticated defenses of their position. One response, developed by philosophers like Russ Shafer-Landau, argues that the parsimony objection misapplies Ockham’s razor. Shafer-Landau contends that we should not eliminate entities that are needed to explain important phenomena, and moral properties are needed to explain moral facts and the normativity of moral judgments. On this view, the ontological cost of positing non-natural moral properties is justified by their explanatory benefits. Another response, advanced by Derek Parfit and others, argues that non-natural moral properties are not as queer as they might initially seem. Parfit suggests that normative properties are not unique to morality but are found in other domains as well, such as epistemology (reasons for belief) and rationality (reasons for action). According to this view, normativity is a pervasive feature of reality that we must accept whether we are naturalists or non-naturalists.

The debate between reductionism and non-naturalism also raises important questions about the relationship between science and morality. Reductionists typically emphasize the continuity between moral inquiry and scientific inquiry, arguing that moral properties can be investigated through the same empirical methods that scientists use to investigate other natural properties. Non-naturalists, by contrast, emphasize the discontinuity between moral and scientific inquiry, arguing that moral properties require a different kind of investigation—rational reflection rather than empirical observation. This disagreement reflects deeper differences about the nature of philosophical inquiry and its relationship to science. Reductionists tend to see philosophy as continuous with science, while non-naturalists tend to see philosophy as having a distinctive method that can reveal truths beyond the reach of empirical investigation.

The choice between reductionism and non-naturalism ultimately depends on one’s philosophical intuitions about the nature of moral properties and the limits of naturalistic explanation. Reductionism offers a more parsimonious account that integrates moral properties with our scientific understanding of the world, but it faces challenges in explaining the normativity of moral judgments. Non-naturalism offers a more robust account of moral normativity but faces challenges in explaining how we can know non-natural moral properties and how they relate to the natural world. As we turn to examine the relationship between reductionism and expressivism, we will see how this debate is further complicated by positions that reject the cognitivist assumption shared by both reductionists and non-naturalists.

### 7.3 Reductionism vs. Expressivism and Non-Cognitivism



The debate between moral property reductionism and expressivism/non-cognitivism represents a fundamental disagreement about the nature of moral discourse and judgment. While reductionism maintains that moral statements describe moral properties that can be reduced to non-moral properties, expressivism and non-cognitivism deny that moral

## 1.8 Scientific Approaches to Moral Property Reduction

The philosophical debates between reductionism and non-cognitivist positions, while abstract and theoretical, have increasingly been informed and challenged by empirical investigations into the nature of morality. As scientific disciplines have developed more sophisticated methods for studying human moral cognition, behavior, and evolution, they have begun to offer their own perspectives on the question of moral property reduction. These scientific approaches do not merely provide data for philosophical reflection but often embody their own implicit reductionist frameworks, suggesting that moral properties might be understood in terms of biological, psychological, or social phenomena. By examining these scientific approaches to moral property reduction, we gain a richer understanding of how empirical research might illuminate or potentially resolve longstanding philosophical questions about the nature of moral properties.

### 8.1 Evolutionary Approaches

Evolutionary biology has provided one of the most influential scientific frameworks for approaching moral property reduction, suggesting that moral properties and judgments might be explicable in terms of evolutionary processes and their psychological byproducts. The evolutionary approach to morality represents a natural extension of Darwin's revolutionary insights, applying the principles of natural selection to the realm of human values and ethical systems. This approach does not merely describe how moral behaviors might have evolved but often implicitly suggests that moral properties themselves might be reducible to properties that conferred evolutionary advantages on our ancestors.

The evolutionary account of morality begins with the observation that human beings, like many other social animals, exhibit behaviors that appear altruistic or cooperative—behaviors that benefit others at some cost to the individual. From a strict evolutionary perspective, such behaviors seem puzzling, as natural selection would seem to favor self-interested behaviors that enhance an individual's reproductive success. The challenge for evolutionary theory is to explain how moral behaviors that appear to reduce individual fitness could have evolved and become widespread in human populations. Various evolutionary mechanisms have been proposed to explain this puzzle, each suggesting different ways in which moral properties might be reduced to evolutionary properties.

Kin selection, first systematically developed by W.D. Hamilton in the 1960s, provides one evolutionary mechanism that might support a reductionist account of moral properties. Hamilton's theory shows that altruistic behaviors can evolve if they are directed toward genetic relatives, because helping relatives increases the chances that one's own genes will be passed on to future generations. The mathematical formulation of this idea, known as Hamilton's rule, states that altruistic behavior will evolve when the cost to the actor is less than the benefit to the recipient multiplied by their genetic relatedness. This principle has been used to

explain altruistic behaviors in many species, from social insects that sacrifice themselves for their colonies to humans who care for family members. From a reductionist perspective, the moral property of “being good to one’s family” might be reduced to the evolutionary property of “enhancing inclusive fitness,” where inclusive fitness includes both direct reproduction and indirect reproduction through relatives.

Reciprocal altruism, developed by Robert Trivers in the 1970s, offers another evolutionary mechanism that might support moral property reduction. Trivers showed that altruistic behavior can evolve between unrelated individuals if there is a high probability of reciprocal benefits in the future. This “you scratch my back, I’ll scratch yours” principle requires cognitive abilities to recognize individuals, remember past interactions, and detect cheaters who accept benefits without reciprocating. The evolution of reciprocal altruism thus selects for psychological mechanisms that support cooperation, including gratitude, guilt, trust, and moralistic aggression against those who violate cooperative norms. From a reductionist perspective, moral properties like “being fair” or “keeping promises” might be reduced to evolutionary properties related to establishing and maintaining reciprocal relationships that enhance fitness.

Group selection, though controversial in evolutionary biology, provides another potential framework for reducing moral properties to evolutionary properties. Group selection theories, defended by David Sloan Wilson and E.O. Wilson among others, suggest that natural selection can operate at the level of groups as well as individuals, favoring traits that enhance group survival and reproduction even if they reduce individual fitness. On this view, moral properties like “being patriotic” or “contributing to the common good” might be reduced to properties that enhance group cohesion and success in intergroup competition. The controversial nature of group selection theories, however, means that this reductionist approach faces significant challenges from mainstream evolutionary biology.

The work of E.O. Wilson, particularly in his 1975 book “Sociobiology: The New Synthesis,” represents one of the most ambitious attempts to reduce moral properties to evolutionary properties. Wilson argued that moral sentiments and behaviors evolved because they enhanced the reproductive success of our ancestors, making moral properties ultimately explicable in biological terms. For Wilson, the moral property of “being good” reduces to the biological property of “having adaptive value,” where adaptiveness is defined in terms of reproductive success. This reductionist approach suggests that moral judgments are not reflections of objective moral facts but rather expressions of biological predispositions shaped by natural selection.

More recently, evolutionary psychologists like Leda Cosmides and John Tooby have extended this reductionist project by examining the specific cognitive mechanisms that underlie moral judgment. Cosmides and Tooby argue that the human mind contains evolved “modules” or specialized cognitive mechanisms designed to solve specific adaptive problems faced by our ancestors. In the moral domain, they suggest that we have evolved a “cheater detection module” that is specifically attuned to violations of social contracts, explaining why people are particularly good at detecting logical violations of conditional rules when they involve cheating but not otherwise. From a reductionist perspective, the moral property of “being unjust” might be reduced to the psychological property of “triggering the cheater detection mechanism,” which itself is reducible to evolutionary properties related to maintaining reciprocal relationships.

The evolutionary approach to moral property reduction faces several significant challenges, most notably



the is-ought problem first articulated by David Hume. Hume pointed out that there is a logical gap between descriptive statements about what is the case and normative statements about what ought to be the case. Even if evolutionary theory can explain how moral judgments evolved, this does not necessarily tell us whether those judgments are correct or whether we ought to follow them. This challenge has been developed by philosophers like G.E. Moore, who argued that the “naturalistic fallacy” consists in attempting to define moral properties in terms of natural properties, including evolutionary properties.

Evolutionary reductionists have responded to this challenge in various ways. One response, developed by E.O. Wilson and Michael Ruse in their 1986 article “The Evolution of Ethics,” is that moral properties are not objective features of the world but rather subjective adaptations that we have been evolutionarily programmed to treat as objective. On this view, the reduction of moral properties to evolutionary properties is complete because there are no objective moral properties beyond the evolutionary processes that shaped our moral psychology. Another response, developed by evolutionary ethicists like Peter Singer, acknowledges that evolution explains the origins of our moral capacities but argues that we can use reason to critically evaluate and refine these evolved moral intuitions, potentially arriving at more objective moral standards. This approach attempts to preserve a form of moral objectivity while still acknowledging the evolutionary origins of moral psychology.

The evolutionary approach to moral property reduction also faces challenges from cultural variation in moral systems. If moral properties are simply evolutionary properties, then we might expect more cross-cultural uniformity in moral judgments than we actually observe. Different cultures exhibit striking differences in their moral codes, from attitudes toward individualism versus collectivism to views on the moral status of women, children, and animals. Evolutionary reductionists typically respond to this challenge by distinguishing between evolved moral capacities and culturally specific moral outputs. On this view, evolution has provided us with general capacities for moral judgment, but specific moral codes are shaped by cultural evolution and environmental factors. This distinction allows evolutionary reductionists to account for cultural variation while still maintaining that moral properties are ultimately reducible to evolutionary properties.

Despite these challenges, the evolutionary approach to moral property reduction has significantly influenced contemporary discussions of morality and ethics. By providing a naturalistic framework for understanding the origins of moral judgments, evolutionary theory has forced philosophers to reconsider the relationship between moral properties and natural properties. The evolutionary perspective suggests that moral properties might not be fundamental features of reality but rather emergent properties of biological and psychological systems shaped by natural selection. This reductionist insight has profound implications for how we understand the nature of morality and our place in the natural world.

## 8.2 Neuroscientific Approaches

Neuroscience has emerged as another powerful scientific discipline offering insights into the potential reduction of moral properties to neural properties. As neuroimaging technologies like functional magnetic resonance imaging (fMRI) have become increasingly sophisticated, neuroscientists have begun to map the neural correlates of moral judgment and decision-making, suggesting that moral properties might be reducible to patterns of neural activity in specific brain regions. This neuroscientific approach to moral property re-

duction represents a more fine-grained extension of the evolutionary perspective, examining the proximate mechanisms of moral cognition rather than their ultimate evolutionary origins.

The neuroscientific study of morality began in earnest in the early 2000s, with pioneering studies by researchers like Joshua Greene, Jorge Moll, and Antonio Damasio. These studies used fMRI to identify brain regions that become active when people make moral judgments, revealing a complex network of neural areas involved in moral cognition. One particularly influential study by Greene and colleagues in 2001 examined neural activity while people considered moral dilemmas, finding that different types of moral judgments activate different brain regions. Personal moral dilemmas, which involve direct physical harm to others (like pushing someone in front of a trolley to save five others), tended to activate areas associated with emotion and social cognition, such as the medial prefrontal cortex, posterior cingulate cortex, and amygdala. Impersonal moral dilemmas, which involve more abstract harm (like flipping a switch to divert a trolley), tended to activate areas associated with working memory and cognitive control, such as the dorsolateral prefrontal cortex and parietal lobe.

From a reductionist perspective, these findings suggest that moral properties might be reducible to patterns of neural activity in specific brain regions. For example, the property of “being morally wrong” might reduce to the property of “activating the amygdala and medial prefrontal cortex,” while the property of “being morally permissible” might reduce to different patterns of neural activation. This neural reductionism would imply that moral properties are not fundamentally different from other properties studied by neuroscience but are simply complex patterns of neural activity that we have learned to categorize using moral language.

The work of Antonio Damasio provides a particularly sophisticated neuroscientific framework for understanding moral property reduction. Damasio’s “somatic marker hypothesis” suggests that emotional processes play a crucial role in decision-making by marking options as advantageous or disadvantageous through bodily feelings. In the moral domain, Damasio argues that moral judgments rely on emotional signals that allow us to rapidly evaluate actions and their consequences. This hypothesis is supported by studies of patients with damage to the ventromedial prefrontal cortex, a brain region involved in emotional processing. These patients often exhibit normal logical reasoning abilities but make profoundly abnormal moral and social decisions, suggesting that emotional processes are essential for normal moral judgment. From a reductionist perspective, Damasio’s work suggests that moral properties like “being morally appropriate” might be reduced to emotional and neural processes that mark actions as advantageous or disadvantageous.

Another significant neuroscientific contribution to moral property reduction comes from the study of psychopathy and other disorders of moral cognition. Psychopathic individuals, who exhibit reduced empathy, guilt, and remorse while maintaining normal intellectual abilities, provide a natural experiment for understanding the neural basis of moral judgment. Neuroimaging studies of psychopaths have revealed abnormalities in brain regions involved in emotional processing, particularly the amygdala and ventromedial prefrontal cortex. These findings suggest that the capacity for normal moral judgment depends on the integrity of specific neural circuits involved in emotional processing. From a reductionist perspective, the moral property of “being morally sensitive” might be reduced to the property of “having normally functioning amygdala and ventromedial prefrontal cortex,” while the property of “being morally insensitive” might reduce to ab-

normalities in these same brain regions.

The neuroscientific approach to moral property reduction also extends to the study of neurotransmitters and hormones that modulate moral behavior. For example, the hormone oxytocin has been shown to increase trust, empathy, and generosity in experimental settings, suggesting that it plays a role in prosocial moral behavior. Similarly, serotonin has been implicated in moral judgment, with studies showing that decreasing serotonin levels leads to harsher moral judgments of harmful actions. From a reductionist perspective, these findings suggest that moral properties might be reducible to neurochemical properties, such as the presence or absence of specific neurotransmitters in particular brain regions.

Despite these intriguing findings, the neuroscientific approach to moral property reduction faces significant methodological and philosophical challenges. One methodological challenge is the difficulty of establishing causal relationships between neural activity and moral judgments. Most neuroimaging studies show correlations between brain activity and moral judgments, but correlation does not imply causation. It is often unclear whether the observed neural activity is causing the moral judgment, reflecting the moral judgment, or merely epiphenomenal to some other process that is actually causing the judgment. This limitation makes it difficult to draw definitive conclusions about the neural basis of moral properties.

Another methodological challenge is the problem of reverse inference, where researchers infer the presence of a mental state (like a moral judgment) from patterns of neural activity. As neuroscientists Russell Poldrack and others have pointed out, this inference is problematic because the same brain region can be involved in multiple cognitive processes, and the same cognitive process can involve multiple brain regions. For example, the amygdala is involved not only in moral judgment but also in fear processing, attention, and memory. This makes it difficult to confidently infer that activation in a particular brain region reflects a specific moral property rather than some other cognitive or emotional process.

Philosophically, the neuroscientific approach to moral property reduction faces the same is-ought problem that challenges evolutionary reductionism. Even if neuroscientists can identify the neural correlates of moral judgments, this does not necessarily tell us whether those judgments are correct or whether we ought to follow them. The fact that a particular moral judgment activates a specific brain region does not make that judgment morally right, any more than the fact that a mathematical judgment activates a specific brain region makes that mathematical judgment correct. This normative gap between descriptive neuroscience and prescriptive ethics represents a significant challenge for neuroscientific reductionism.

Neuroscientific reductionists have responded to these challenges in various ways. One response, developed by philosophers like Pat Churchland, is that the is-ought gap may not be as insurmountable as traditionally supposed. Churchland argues that as we learn more about the neural basis of moral judgment, we may discover that certain moral principles are better grounded in our neural architecture than others, potentially providing a naturalistic foundation for normative ethics. This approach suggests that neuroscience might not only describe how we do make moral judgments but also inform how we ought to make moral judgments by revealing which moral principles are most compatible with our evolved neural systems.

Another response, developed by neuroscientists like Joshua Greene, is to embrace a form of meta-ethical relativism or skepticism based on neural findings. Greene argues that the dual-process model of moral

judgment, with its distinction between emotional and cognitive processes, suggests that many of our deontological moral intuitions (like the wrongness of directly harming someone) are driven by emotional responses that evolved for specific adaptive purposes rather than by rational considerations of consequences. On this view, the reduction of moral properties to neural properties leads to a form of moral skepticism that questions the objectivity of deontological moral principles while potentially preserving a more objective form of consequentialism.

The neuroscientific approach to moral property reduction has significantly advanced our understanding of the biological basis of moral judgment, revealing the complex neural networks that underlie our capacity for moral evaluation. While this approach faces significant methodological and philosophical challenges, it has opened up new avenues for exploring the relationship between moral properties and neural properties, suggesting that moral phenomena may ultimately be explicable in terms of the same principles that govern other aspects of brain function. As we turn to examine psychological approaches to moral property reduction, we will see how these neuroscientific insights are complemented by more behavioral and cognitive perspectives on the nature of moral properties.

### 8.3 Psychological Approaches

Psychological research on moral development, judgment, and behavior provides another important scientific perspective on moral property reduction, suggesting that moral properties might be reducible to psychological properties such as emotions, cognitive processes, and personality traits. Unlike neuroscience, which focuses on the neural mechanisms underlying moral cognition, psychology examines the mental processes and behaviors that constitute moral phenomena at a more abstract level. This psychological approach to moral property reduction draws on diverse theoretical traditions within psychology, from psychoanalysis and behaviorism to cognitive psychology and social psychology, each offering different insights into how moral properties might be understood in psychological terms.

The psychological study of morality has a long history, beginning with the work of early theorists like Sigmund Freud, B.F. Skinner, and Jean Piaget. Freud's psychoanalytic theory suggested that moral development involves the internalization of parental and societal values through the formation of the superego, a mental structure that generates guilt when we violate internalized moral standards. From a reductionist perspective, Freud's theory implies that moral properties like "being morally wrong" might be reduced to psychological properties related to superego activation and the experience of guilt. Skinner's behaviorist approach, by contrast, suggested that moral behavior is shaped by reinforcement and punishment, with moral properties like "being good" reducing to properties related to reinforcement history and stimulus control.

Jean Piaget's cognitive-developmental theory, developed in the 1930s

## 1.9 Cultural and Social Dimensions of Moral Property Reduction

The scientific approaches to moral property reduction we have examined thus far offer valuable insights into the biological, neurological, and psychological foundations of moral phenomena. However, these perspectives, while illuminating, often risk treating morality as a universal phenomenon divorced from the rich

tapestry of cultural contexts and social practices that shape moral life. To fully appreciate the implications of moral property reduction, we must expand our inquiry to examine how reductionist approaches interact with the cultural and social dimensions of morality. This exploration reveals that moral property reduction is not merely an abstract metaphysical position but has profound implications for understanding moral diversity across cultures, evaluating social progress, addressing practical ethical dilemmas, and shaping approaches to moral education. By examining these cultural and social dimensions, we gain a more comprehensive understanding of how moral property reduction might inform our collective efforts to navigate the complex moral landscape of human societies.

### 9.1 Moral Property Reduction and Cultural Relativism

The relationship between moral property reduction and cultural relativism represents one of the most complex and contested areas in metaethical discourse. Cultural relativism, the position that moral truths are relative to cultural contexts and that there are no universal moral standards that apply across all cultures, appears to stand in tension with the reductionist project, which typically aims to identify moral properties with more fundamental properties that might be universal in nature. This tension raises profound questions about whether reductionism can accommodate the remarkable diversity of moral systems observed across human societies or whether it necessarily implies a form of moral universalism that fails to respect cultural differences.

The challenge of cultural relativism for moral property reduction becomes particularly apparent when we examine the vast array of moral practices and beliefs documented by anthropologists and ethnographers. The anthropological record reveals striking differences in moral codes across cultures, from attitudes toward individualism versus collectivism to views on the moral status of women, children, animals, and the environment. For instance, while many Western cultures emphasize individual rights and autonomy, many traditional societies prioritize communal harmony and social cohesion over individual freedoms. Similarly, practices considered morally abhorrent in one culture—such as arranged marriages, polygamy, or ritual animal sacrifice—may be accepted or even valued in others. This cultural variation in moral codes raises a significant challenge for reductionist approaches: if moral properties reduce to natural properties, and natural properties are presumably universal, why do we observe such extensive cultural variation in moral judgments and practices?

Reductionists have developed several strategies to address this challenge. One approach, exemplified in the work of anthropologist Donald Brown, distinguishes between universal moral capacities and culturally specific moral outputs. Brown's research on "human universals" identifies a set of moral capacities and concerns that appear to be present in all human cultures, including reciprocity, cooperation, fairness, and concern for kin. From this perspective, while specific moral codes vary across cultures, they all express these universal moral concerns, which might be reducible to universal natural properties such as those related to kin selection, reciprocal altruism, or social cooperation. On this view, cultural variation in moral systems reflects different ways of implementing universal moral concerns rather than fundamental differences in moral properties themselves.

Another reductionist response to cultural relativism emphasizes the distinction between descriptive and nor-

mative relativism. Descriptive relativism, the empirical observation that moral beliefs and practices vary across cultures, is widely accepted by anthropologists and poses no necessary challenge to reductionism. Normative relativism, the metaethical position that moral truths are relative to cultural contexts and that no culture's moral code is objectively better than another's, is more controversial and potentially incompatible with many forms of reductionism. Reductionists like Richard Brandt and Peter Railton acknowledge the reality of descriptive relativism while rejecting normative relativism, arguing that cultural variation in moral codes might reflect different levels of moral development or different factual beliefs about the world rather than fundamental differences in moral properties themselves. For example, differences in attitudes toward gender equality across cultures might reflect different beliefs about women's capabilities rather than different conceptions of gender justice itself.

The work of anthropologist Christopher Boehm provides a particularly nuanced perspective on the relationship between moral property reduction and cultural relativism. Boehm's research on the evolution of moral communities suggests that while specific moral codes vary across cultures, they all serve similar functions of regulating social behavior and promoting cooperation within groups. Boehm identifies a "moral community" as a group whose members share a sense of responsibility for one another's welfare and enforce moral norms through mechanisms of social control, such as gossip, ridicule, and punishment. From a reductionist perspective, the property of "being a moral community" might be reduced to properties related to social cohesion, cooperation, and enforcement of norms, which would be universal across human societies despite cultural variation in specific moral codes.

The debate between reductionism and cultural relativism also intersects with questions about moral progress and cross-cultural moral criticism. If moral properties reduce to natural properties, and if we can identify which natural properties realize moral value, then we might have a basis for evaluating different moral systems and identifying instances of moral progress. For example, if the moral property of "justice" reduces to the natural property of "fair distribution of resources," then we might criticize cultural practices that result in grossly unequal resource distribution as unjust, regardless of whether those practices are accepted within their cultural context. This capacity for cross-cultural moral criticism represents a significant advantage of reductionism over strong forms of cultural relativism, which struggle to explain how we can criticize practices like slavery, genocide, or systematic oppression when they are accepted within their cultural contexts.

However, reductionists must be careful not to dismiss cultural variation in moral systems as merely superficial or mistaken. The anthropological record reveals that different cultures have developed sophisticated moral systems that are well adapted to their particular environmental and social contexts. For example, the moral emphasis on harmony with nature in many indigenous cultures reflects deep ecological knowledge that has sustained these cultures for generations, while the moral emphasis on individual rights in Western societies reflects the social and economic conditions of modern liberal democracies. A sophisticated reductionist approach must acknowledge that different natural properties might realize moral value in different contexts, allowing for legitimate cultural variation in moral systems while still maintaining that moral properties reduce to natural properties.

The relationship between moral property reduction and cultural relativism thus represents a complex di-



alectic rather than a simple opposition. Reductionism can accommodate the reality of cultural variation in moral systems by distinguishing between universal moral capacities and culturally specific moral outputs, by acknowledging that different natural properties might realize moral value in different contexts, and by emphasizing the functional role of moral systems in regulating social behavior. At the same time, reductionism offers resources for cross-cultural moral criticism and the identification of moral progress that are difficult to reconcile with strong forms of normative relativism. This nuanced relationship suggests that moral property reduction and cultural relativism need not be viewed as mutually exclusive positions but can instead inform each other in productive ways, enhancing our understanding of both the universal and culturally specific dimensions of morality.

## 9.2 Moral Property Reduction and Social Progress

The concept of moral progress represents one of the most powerful and contested ideas in ethical discourse, reflecting our collective aspiration for societies to become more just, equitable, and humane over time. From a reductionist perspective, moral progress can be understood as progress in our understanding and realization of the natural properties that constitute moral value. This understanding of moral progress offers a framework for evaluating social change and guiding reform efforts, suggesting that we can identify objective standards of improvement even in the face of cultural diversity and moral disagreement. However, this reductionist account of moral progress also raises profound questions about how we can know which natural properties realize moral value and how we can distinguish genuine moral progress from mere social change.

The historical record provides numerous examples that many people intuitively recognize as instances of moral progress, including the abolition of slavery, the expansion of voting rights, the advancement of gender equality, and the development of international human rights standards. These historical transformations suggest that societies can become morally better over time, not merely different. From a reductionist perspective, this progress can be understood as progress in identifying and realizing the natural properties that constitute moral value. For example, the abolition of slavery might represent progress because slavery fails to realize natural properties related to human well-being, autonomy, and equality, which are constitutive of moral value. Similarly, the expansion of voting rights might represent progress because democratic participation realizes natural properties related to self-determination and political equality.

The work of utilitarian philosopher Peter Singer provides a particularly systematic reductionist account of moral progress. Singer argues that moral progress can be understood as an expanding circle of moral concern, from family and tribe to nation, race, gender, species, and ultimately all sentient beings. This expanding circle reflects a growing recognition that the natural property of “capacity to suffer” (or “sentience”) is the property that makes a being morally considerable. From Singer’s perspective, historical movements for abolition, women’s rights, and animal liberation all represent progress because they expand our moral concern to include beings who were previously excluded based on morally irrelevant characteristics like race, gender, or species. This reductionist account of moral progress provides a clear standard for evaluating social change: practices and institutions are morally better to the extent that they reduce suffering and promote well-being for all sentient beings.

Another influential reductionist account of moral progress comes from the capability approach developed

by economist and philosopher Amartya Sen and philosopher Martha Nussbaum. This approach identifies a set of central human capabilities—such as the capability to live a healthy life, to be educated, to participate in political processes, and to enjoy social relationships—that are essential for human flourishing. From this perspective, moral progress consists in expanding these capabilities for all people, particularly those who have been historically disadvantaged. For example, the advancement of gender equality represents moral progress because it expands women’s capabilities to live lives of their own choosing, free from discrimination and violence. This reductionist account provides a framework for evaluating social institutions and policies based on their contribution to human capabilities, offering a more nuanced standard than simple measures of economic growth or utility.

The relationship between moral property reduction and social progress also intersects with questions about the drivers of moral change. If moral progress consists in better realizing the natural properties that constitute moral value, what social processes facilitate this progress? The sociologist Robert Wuthnow has identified several mechanisms of moral change in modern societies, including social movements, religious institutions, educational systems, and the media. Social movements like the civil rights movement, the women’s movement, and the environmental movement have been particularly important drivers of moral progress, challenging existing moral frameworks and expanding our moral concern to include previously marginalized groups. From a reductionist perspective, these social movements can be understood as mechanisms for discovering and promoting the natural properties that constitute moral value, even when those properties conflict with established social practices and interests.

The concept of moral progress also raises challenges for reductionist approaches, particularly in cases of apparent moral regress or disagreement about what constitutes progress. For example, some might argue that the increasing individualism and materialism of modern societies represents moral regress rather than progress, reflecting a decline in community bonds and spiritual values. Similarly, debates about issues like abortion, euthanasia, and genetic engineering reveal deep disagreements about what constitutes moral progress. Reductionists must explain how we can distinguish genuine moral progress from mere social change or regress in the face of such disagreements.

One response to this challenge, developed by philosopher David Wong, emphasizes the concept of “pluralistic relativism,” which acknowledges that there may be multiple valid ways of realizing moral value while still allowing for progress within each tradition. From this perspective, different cultures may emphasize different natural properties as constitutive of moral value, but each can still make progress in better realizing those properties. For example, a culture that emphasizes communal harmony can make progress by developing institutions that better promote social cohesion, while a culture that emphasizes individual autonomy can make progress by expanding personal freedoms. This pluralistic approach allows for culturally specific forms of moral progress while still maintaining that moral properties reduce to natural properties.

Another response, developed by philosopher Michelle Moody-Adams, emphasizes the importance of moral inquiry and deliberation in identifying genuine moral progress. Moody-Adams argues that moral progress is not simply a matter of discovering pre-existing moral truths but involves critical reflection on moral traditions and practices in light of new experiences and knowledge. From a reductionist perspective, this process

of moral inquiry can be understood as a method for discovering which natural properties realize moral value in particular contexts, taking into account the complex interactions between human needs, social institutions, and environmental conditions. This approach acknowledges the provisional and fallible nature of our judgments about moral progress while still maintaining that such judgments can be objectively grounded in natural properties.

The relationship between moral property reduction and social progress has significant implications for contemporary social and political debates. Reductionist approaches provide resources for evaluating proposed reforms and policies, suggesting that we can assess them based on their contribution to the natural properties that constitute moral value, such as well-being, equality, freedom, or human capabilities. At the same time, reductionism reminds us that moral progress is not inevitable but requires intentional effort to discover and promote the natural properties that realize moral value. This understanding of moral progress as both objective and achievable offers a hopeful vision of social change while acknowledging the complexity and difficulty of the moral project.

### 9.3 Moral Property Reduction and Applied Ethics

Applied ethics represents the practical domain where theoretical metaethical positions like moral property reduction must prove their worth by offering guidance on concrete moral dilemmas. The reductionist project, if successful, would have profound implications for applied ethics, potentially providing a method for resolving moral controversies by identifying the natural properties that constitute moral value in specific contexts. This application of reductionism to practical ethical issues raises questions about how we can move from abstract metaphysical claims about the nature of moral properties to concrete guidance on issues like bioethics, environmental ethics, business ethics, and technology ethics. By examining how moral property reduction might inform approaches to applied ethical issues, we gain insight into both the practical implications of reductionism and the challenges of translating metaethical theory into ethical practice.

The field of bioethics provides a particularly rich domain for exploring the implications of moral property reduction for applied ethics. Bioethical dilemmas—such as those surrounding euthanasia, abortion, stem cell research, and genetic enhancement—often involve conflicting values and profound uncertainty about the moral status of entities like embryos, fetuses, and future generations. A reductionist approach to these dilemmas would attempt to identify the natural properties that determine moral status and then apply this understanding to resolve specific controversies. For example, the debate about the moral status of embryos might be informed by identifying which natural properties—such as sentience, consciousness, self-awareness, or the capacity for relationships—are necessary for moral consideration. From a reductionist perspective, if moral status reduces to sentience, then early embryos that lack developed nervous systems would not have the same moral status as sentient beings, with implications for the permissibility of embryonic stem cell research.

The work of utilitarian philosopher Peter Singer illustrates how a reductionist approach might inform bioethical debates. Singer argues that the property of “personhood,” which confers full moral status, reduces to the natural properties of self-awareness, rationality, and the capacity to see oneself as existing over time. On this view, beings that lack these properties—such as early human fetuses, severely cognitively impaired humans,

and non-human animals—do not have the same moral status as persons, with significant implications for issues like abortion, animal experimentation, and treatment of those with severe cognitive disabilities. This reductionist approach provides clear guidance for bioethical dilemmas by identifying the natural properties that determine moral status, though it remains controversial because it conflicts with many people’s intuitive moral judgments about the equal worth of all human beings.

Environmental ethics represents another area where moral property reduction has significant implications. Traditional ethical theories have often focused exclusively on human interests, but environmental ethicists argue that we must extend moral consideration to non-human entities like animals, plants, ecosystems, and even the planet as a whole. A reductionist approach to environmental ethics would attempt to identify the natural properties that make entities morally considerable and then apply this understanding to determine our environmental obligations. For example, if moral considerability reduces to sentience, as many utilitarians argue, then sentient animals would deserve moral consideration but non-sentient entities like plants, rivers, and ecosystems would not. By contrast, if moral considerability reduces to properties like being a living organism, having interests, or contributing to ecosystem integrity, then our environmental obligations would be more extensive.

The work of environmental philosopher Paul Taylor illustrates a reductionist approach to environmental ethics. Taylor argues that all living organisms have inherent worth and deserve moral consideration because they are “teleological centers of life”—each organism pursues its own good in its own way. From Taylor’s perspective, the property of “having inherent worth” reduces to the natural property of “being a teleological center of life,” which includes all living organisms but excludes non-living entities like rivers and mountains. This reductionist approach provides a basis for criticizing practices that unnecessarily harm living organisms while still allowing for human use of the environment when necessary for human survival and well-being. Taylor’s approach demonstrates how moral property reduction can inform environmental ethics by identifying the natural properties that determine moral considerability.

Business ethics represents a third domain where moral property reduction has significant implications. Business activities often involve conflicts between economic goals and moral values, raising questions about corporate social responsibility, fair labor practices, environmental sustainability, and ethical marketing. A reductionist approach to business ethics would attempt to identify the natural properties that constitute moral value in business contexts and then apply this understanding to evaluate business practices and guide corporate decision-making. For example, if the moral property of “fairness” reduces to the natural property of “distributing benefits and burdens according to relevant contributions and needs,” then business practices that result in extreme income inequality while workers struggle to meet basic needs would be morally problematic.

The work of business ethicist Norman Bowie illustrates how a reductionist approach might inform business ethics. Bowie argues that business activities should be

## 1.10 Practical Implications and Applications of Moral Property Reduction

Alright, I need to write Section 10 of this Encyclopedia Galactica article on “Moral Property Reduction.” This section focuses on the practical implications and applications of moral property reduction. Let me analyze what I need to do:

1. I need to cover four subsections:
  - 10.1 Implications for Moral Reasoning and Decision-Making
  - 10.2 Implications for Legal and Political Theory
  - 10.3 Implications for Artificial Intelligence and Machine Ethics
  - 10.4 Implications for Personal and Interpersonal Relationships
2. I need to build naturally upon the previous content (Section 9), which ended with a discussion about moral property reduction and business ethics, specifically mentioning Norman Bowie’s work.
3. I should maintain the same authoritative yet engaging style as the previous sections, with rich detail, specific examples, and flowing narrative prose.
4. I should avoid bullet points and instead weave information into flowing paragraphs.
5. I should write approximately the target word count for this section (though the target isn’t specified in the prompt).
6. I should end with a transition that leads to the next section (Section 11).

Let me start drafting the section, beginning with a smooth transition from the previous section and then covering each of the four implications in detail.

For the transition, I’ll note that while the previous section examined how moral property reduction applies to specific fields like business ethics, this section will explore the broader practical implications of adopting a reductionist position across various domains of human activity.

For each subsection, I’ll need to: - Explain how reductionism might transform approaches in that domain - Analyze the implications of reductionism for specific practices or concepts - Consider whether reductionism simplifies or complicates processes in that domain - Explore practical frameworks based on reductionist principles - Include specific examples and case studies - Discuss challenges to reductionist approaches in that domain

Let me begin writing:

### Section 10: Practical Implications and Applications of Moral Property Reduction

The exploration of moral property reduction in applied ethics domains like business ethics reveals its potential to transform how we approach practical moral questions. However, the implications of adopting a reductionist position extend far beyond specific ethical fields, permeating virtually every domain of human

activity where moral reasoning plays a role. By examining these broader practical implications, we gain insight into how moral property reduction might reshape our understanding of moral reasoning, transform legal and political institutions, guide the development of artificial intelligence, and reconfigure personal relationships. These applications demonstrate that moral property reduction is not merely an abstract metaphysical position but has profound consequences for how we live, make decisions, and organize our collective life.

### 10.1 Implications for Moral Reasoning and Decision-Making

The adoption of a moral property reductionist position would fundamentally transform our approach to moral reasoning and decision-making, potentially simplifying complex ethical dilemmas by reducing them to questions about natural properties. This transformation would affect not only how philosophers and ethicists approach moral problems but also how ordinary people navigate the moral landscape of their everyday lives. By examining these implications, we can better understand how reductionism might make moral reasoning more accessible, systematic, and empirically grounded.

Traditional approaches to moral reasoning often involve the application of abstract moral principles to specific cases, a process that can be fraught with uncertainty and disagreement. For example, deontological approaches require determining which duties apply in a given situation and how they should be prioritized, while utilitarian approaches require predicting consequences and comparing their value across different options. A reductionist approach to moral reasoning would bypass some of these complexities by focusing directly on the natural properties that constitute moral value. If moral properties reduce to natural properties like well-being, autonomy, or equality, then moral reasoning becomes primarily a matter of identifying which actions or policies best realize these natural properties in specific contexts.

The work of philosopher Peter Singer exemplifies this reductionist approach to moral reasoning. Singer's utilitarianism reduces the moral property of "rightness" to the natural property of "maximizing well-being" (understood as preference satisfaction). This reduction transforms moral reasoning into a process of calculating which actions will produce the best consequences for all affected beings. Singer applies this approach to a wide range of practical issues, from global poverty to animal rights, arguing that we can determine our moral obligations by identifying which actions will do the most good. For example, in his work on global poverty, Singer argues that if well-being is the natural property that constitutes moral value, then affluent people have a strong obligation to donate to effective charities that improve the lives of the global poor, as this would realize more well-being than spending money on luxuries.

Another example of reductionist moral reasoning comes from the capability approach developed by Amartya Sen and Martha Nussbaum. This approach reduces moral value to the natural property of "expanding human capabilities"—the real freedoms people have to achieve functionings they value. Moral reasoning, from this perspective, involves identifying which policies and institutions best expand these capabilities for all people, particularly the most disadvantaged. Nussbaum has applied this approach to issues like gender justice, arguing that gender equality can be advanced by ensuring that women have central capabilities such as life, bodily health, bodily integrity, practical reason, affiliation, and control over their environment. This reductionist approach transforms moral reasoning about gender justice into an empirical question about which social arrangements best expand women's capabilities.



The reductionist approach to moral reasoning also has implications for how we handle moral disagreement and uncertainty. Traditional approaches often struggle when moral principles conflict or when their application is unclear. A reductionist approach might resolve some of these disagreements by focusing on the natural properties that constitute moral value. For example, if two people disagree about whether capital punishment is morally justified, a reductionist approach might suggest that this disagreement could be resolved by examining empirical evidence about whether capital punishment actually realizes the natural properties that constitute moral value, such as deterrence, justice, or respect for human life. If evidence shows that capital punishment does not deter crime more effectively than life imprisonment, then a utilitarian reductionist would conclude that it is not morally justified.

However, the reductionist approach to moral reasoning also faces significant challenges. One challenge is the difficulty of identifying which natural properties actually constitute moral value. Different reductionist theories identify different natural properties as morally valuable, from well-being and preference satisfaction to autonomy, equality, and human capabilities. Without agreement on which natural properties are morally valuable, reductionist moral reasoning may simply replace disagreements about moral properties with disagreements about natural properties. For example, a debate about abortion might shift from a disagreement about the moral status of fetuses to a disagreement about whether sentience, potentiality, or genetic humanity is the natural property that confers moral status.

Another challenge is the complexity of predicting how actions will affect natural properties like well-being or capabilities. Even if we agree that well-being is the natural property that constitutes moral value, we may still disagree about which actions will actually promote well-being, particularly in complex situations involving multiple stakeholders and uncertain consequences. This problem of moral uncertainty plagues all approaches to moral reasoning but may be particularly acute for reductionist approaches that rely heavily on empirical predictions about the consequences of actions.

Despite these challenges, the reductionist approach to moral reasoning offers several potential advantages. One advantage is its potential to make moral reasoning more accessible to people without specialized philosophical training. By focusing on natural properties that can be investigated through empirical methods, reductionism might democratize moral reasoning, allowing more people to participate in moral deliberation based on evidence and reasoning rather than appeals to authority or intuition. Another advantage is its potential to make moral reasoning more systematic and transparent. By reducing moral properties to natural properties, reductionism provides a clear standard for evaluating moral arguments and decisions, potentially making moral reasoning more accountable and less susceptible to bias and manipulation.

The implications of moral property reduction for moral reasoning also extend to moral education. If moral properties reduce to natural properties, then moral education might focus more on developing the empirical knowledge and reasoning skills needed to identify and promote these natural properties, rather than on instilling specific moral principles or virtues. For example, a reductionist approach to environmental ethics might focus on teaching students about the ecological systems that sustain life and the human activities that threaten these systems, rather than on teaching abstract principles about the intrinsic value of nature. This approach to moral education might be more effective at preparing students to address the complex moral

challenges of the contemporary world, from climate change to global inequality.

In summary, the adoption of a moral property reductionist position would transform moral reasoning by focusing attention on the natural properties that constitute moral value. This transformation could make moral reasoning more accessible, systematic, and empirically grounded, though it also faces challenges related to identifying the relevant natural properties and predicting their consequences. As we turn to examine the implications of moral property reduction for legal and political theory, we will see how these transformations in moral reasoning might reshape our approach to law, justice, and governance.

## 10.2 Implications for Legal and Political Theory

The implications of moral property reduction extend beyond individual moral reasoning to the collective realm of legal and political theory, potentially transforming how we conceptualize justice, rights, and legitimate authority. Legal and political systems are fundamentally concerned with creating and enforcing rules that govern social life, and these rules are typically justified by appealing to moral principles. If moral properties reduce to natural properties, then the justification of legal and political institutions might be grounded in these natural properties rather than in abstract moral principles. This grounding could lead to more empirically informed approaches to law and politics, potentially making these institutions more effective at promoting human well-being and social justice.

The concept of justice provides a particularly illuminating example of how moral property reduction might transform legal and political theory. Traditional theories of justice often appeal to abstract moral principles, such as John Rawls's principles of justice as fairness or Robert Nozick's entitlement theory of justice. A reductionist approach to justice would instead attempt to identify the natural properties that constitute justice, potentially grounding it in properties like equality, well-being, or human capabilities. For example, the capability approach developed by Amartya Sen and Martha Nussbaum reduces justice to the natural property of "expanding human capabilities," suggesting that just institutions are those that effectively expand the real freedoms people have to achieve functionings they value. This reductionist approach transforms debates about justice from abstract philosophical disputes to empirical questions about which institutions best expand human capabilities.

The work of legal philosopher Ronald Dworkin illustrates another way in which moral property reduction might inform legal theory. Dworkin's theory of "law as integrity" suggests that legal interpretation should aim to make the law the best it can be morally, which requires identifying the moral principles that underlie legal doctrines and precedents. While Dworkin himself is not a reductionist, a reductionist approach to his theory might suggest that the moral principles that underlie the law can be identified with natural properties like fairness, equality, or human dignity. This identification would make legal interpretation more empirically grounded, as judges would need to consider not only abstract moral principles but also evidence about which legal interpretations best realize the natural properties that constitute moral value.

The implications of moral property reduction for political theory are equally profound. Traditional political theories often justify political authority by appealing to abstract moral principles, such as the social contract, natural rights, or the common good. A reductionist approach to political theory would instead attempt to ground political authority in natural properties that can be empirically investigated. For example, a utilitarian

reductionist might justify political authority by its ability to maximize well-being, while a capability theorist might justify it by its ability to expand human capabilities. This grounding would make political justification more empirical and less abstract, potentially leading to more effective forms of governance.

The work of political philosopher David Held illustrates how a reductionist approach might inform theories of democracy. Held's theory of "cosmopolitan democracy" suggests that democratic institutions should be designed to promote autonomy and well-being for all people, not just citizens of particular states. While Held does not explicitly adopt a reductionist position, a reductionist approach to his theory might suggest that autonomy and well-being are natural properties that constitute moral value, and that democratic institutions should be evaluated based on their effectiveness at promoting these properties. This approach would transform debates about democracy from abstract disputes about political principles to empirical questions about which democratic institutions best promote autonomy and well-being.

The implications of moral property reduction for human rights provide another important example. Traditional theories of human rights often ground these rights in abstract moral principles, such as human dignity or natural law. A reductionist approach to human rights would instead attempt to ground these rights in natural properties that can be empirically investigated. For example, the philosopher James Griffin argues that human rights protect the natural properties of "personhood," which includes autonomy, liberty, and the minimum provision for pursuing one's goals. This reductionist approach transforms human rights from abstract moral claims to protections for specific natural properties that are essential for human dignity and well-being.

The practical implications of moral property reduction for legal and political institutions are significant. If legal and political systems are justified by their ability to promote natural properties like well-being, equality, or human capabilities, then these systems should be designed and evaluated based on empirical evidence about their effectiveness at promoting these properties. This approach could lead to more evidence-based forms of governance, where policies are implemented and evaluated based on their actual consequences rather than on ideological commitments. For example, criminal justice policies might be evaluated based on evidence about their effectiveness at reducing crime and promoting rehabilitation, rather than on abstract principles about retribution or deterrence.

However, the reductionist approach to legal and political theory also faces significant challenges. One challenge is the difficulty of measuring natural properties like well-being, equality, or human capabilities, particularly across diverse populations with different values and circumstances. Without reliable measures of these properties, it is difficult to evaluate legal and political institutions based on their effectiveness at promoting them. Another challenge is the potential for reductionism to overlook important moral considerations that are not easily reducible to natural properties, such as the intrinsic value of human dignity or the importance of procedural fairness in legal proceedings.

Despite these challenges, the reductionist approach to legal and political theory offers several potential advantages. One advantage is its potential to make legal and political institutions more responsive to evidence and less susceptible to ideological bias. By grounding legal and political justification in natural properties that can be empirically investigated, reductionism might promote more pragmatic and effective forms of

governance. Another advantage is its potential to facilitate international cooperation on global challenges like climate change, poverty, and human rights. If legal and political systems are justified by their ability to promote natural properties like well-being and human capabilities, then nations might find common ground in addressing these global challenges, even when they disagree about abstract moral principles.

The implications of moral property reduction for legal and political theory also extend to the practice of law and politics. Lawyers and politicians might focus more on empirical evidence about the consequences of laws and policies, and less on abstract principles or rhetorical appeals. This shift could make legal and political discourse more substantive and less polarized, potentially leading to more effective solutions to social problems. For example, debates about criminal justice reform might focus less on abstract principles about “tough on crime” or “compassionate release” and more on evidence about which policies actually reduce crime and promote rehabilitation.

In summary, the adoption of a moral property reductionist position would transform legal and political theory by grounding legal and political justification in natural properties that can be empirically investigated. This transformation could lead to more evidence-based forms of governance, more effective legal and political institutions, and more substantive legal and political discourse. As we turn to examine the implications of moral property reduction for artificial intelligence and machine ethics, we will see how these transformations in legal and political theory might inform the development of ethical AI systems.

### 10.3 Implications for Artificial Intelligence and Machine Ethics

The rapid advancement of artificial intelligence technologies presents unprecedented ethical challenges that require us to consider how machines might be designed to make moral decisions. Moral property reduction offers a potentially valuable framework for addressing these challenges, suggesting that we might program artificial moral agents by identifying the natural properties that constitute moral value and designing systems to promote these properties. This application of reductionism to machine ethics could transform how we approach the development of ethical AI systems, potentially making these systems more reliable, transparent, and aligned with human values. However, it also raises profound questions about the nature of moral agency and the limits of machine-based moral decision-making.

The challenge of programming ethical AI systems stems from the complexity of moral reasoning and the difficulty of translating moral judgments into computational algorithms. Traditional approaches to machine ethics often attempt to program AI systems with explicit moral principles or rules, such as Isaac Asimov’s famous Three Laws of Robotics. However, these rule-based approaches face significant limitations, as moral principles often conflict in complex situations and their application requires contextual judgment that is difficult to formalize. A reductionist approach to machine ethics would attempt to bypass some of these limitations by focusing on the natural properties that constitute moral value, rather than on abstract moral principles. For example, a utilitarian reductionist might program an AI system to maximize well-being, while a capability theorist might program it to expand human capabilities.

The work of machine ethics researchers Wendell Wallach and Colin Allen illustrates how a reductionist approach might inform the development of ethical AI systems. In their book “Moral Machines: Teaching Robots Right from Wrong,” Wallach and Allen discuss various approaches to programming artificial moral

agents, including top-down approaches that implement explicit ethical theories and bottom-up approaches that allow systems to learn ethical behavior from experience. A reductionist approach could be implemented as either a top-down or bottom-up approach, depending on how the natural properties that constitute moral value are identified. For example, a top-down reductionist approach might program an autonomous vehicle to minimize harm (a natural property that constitutes moral value for utilitarians) in accident situations, while a bottom-up reductionist approach might train a system to recognize and promote human capabilities through machine learning.

The implications of moral property reduction for autonomous vehicles provide a particularly concrete example of how reductionism might inform the development of ethical AI systems. Autonomous vehicles must make split-second decisions in potentially life-threatening situations, such as whether to swerve to avoid a pedestrian and risk injuring the vehicle's occupants, or to continue straight and risk hitting the pedestrian. A reductionist approach to these decisions would focus on the natural properties that constitute moral value, such as minimizing harm, respecting autonomy, or promoting well-being. For example, a utilitarian reductionist might program the vehicle to minimize overall harm, even if this means sacrificing the vehicle's occupants, while a deontological reductionist might program the vehicle to respect the autonomy of its occupants by not intentionally harming them. These different reductionist approaches would lead to different ethical decisions in accident situations, highlighting the importance of determining which natural properties actually constitute moral value.

The development of AI systems for healthcare provides another important example of how moral property reduction might inform machine ethics. Healthcare AI systems make increasingly important decisions about diagnosis, treatment recommendations, and resource allocation, raising profound ethical questions about how these systems should balance different moral considerations. A reductionist approach to healthcare AI would focus on the natural properties that constitute medical value, such as promoting health, extending life, or improving quality of life. For example, an AI system designed to allocate scarce medical resources might be programmed to maximize the number of quality-adjusted life years (QALYs) produced, reflecting a utilitarian reductionist approach that reduces medical value to the natural property of well-being measured in QALYs.

The implications of moral property reduction for military AI systems are particularly

## 1.11 Contemporary Debates and Developments in Moral Property Reduction

I need to write Section 11 of this Encyclopedia Galactica article on “Moral Property Reduction.” The section should focus on contemporary debates and developments in moral property reduction, highlighting cutting-edge research and emerging perspectives.

Let me analyze what I need to do:

1. I need to cover four subsections:
  - 11.1 New Reductionist Frameworks

- 11.2 Challenges from Experimental Philosophy
  - 11.3 Cross-Disciplinary Approaches to Moral Reduction
  - 11.4 Global and Comparative Perspectives on Moral Reduction
2. I need to build naturally upon the previous content (Section 10), which ended with a discussion about the implications of moral property reduction for military AI systems and their ethical considerations.
  3. I should maintain the same authoritative yet engaging style as the previous sections, with rich detail, specific examples, and flowing narrative prose.
  4. I should avoid bullet points and instead weave information into flowing paragraphs.
  5. I should write approximately the target word count for this section (though the target isn't specified in the prompt).
  6. I should end with a transition that leads to the next section (Section 12, which is the conclusion).

Let me start drafting the section, beginning with a smooth transition from the previous section and then covering each of the four topics in detail.

For the transition, I'll note that while the previous section examined practical applications of moral property reduction across various domains, this section will turn to contemporary debates and emerging developments in the philosophical literature itself, highlighting how reductionist approaches continue to evolve in response to new challenges and insights.

For each subsection, I'll need to: - Examine recent developments in reductionist metaethical theories - Analyze novel approaches to reducing moral properties - Consider how contemporary metaphysics informs new reductionist positions - Explore challenges from experimental philosophy - Examine cross-disciplinary approaches - Consider global and comparative perspectives

Let me begin writing:

The complex ethical questions surrounding military AI systems illustrate the profound practical implications of moral property reduction in cutting-edge technological domains. These applications, while fascinating, represent only one dimension of the ongoing evolution of reductionist approaches to morality. Within the philosophical literature itself, moral property reduction continues to develop in response to new challenges, incorporating insights from diverse fields and adapting to emerging perspectives. By examining these contemporary debates and developments, we gain insight into how reductionist approaches are evolving to address long-standing criticisms, incorporate new methodologies, and engage with global philosophical traditions. These developments suggest that moral property reduction remains a vibrant and dynamic field of inquiry, continually reinventing itself in response to new philosophical challenges and opportunities.

### 11.1 New Reductionist Frameworks

The landscape of moral property reduction has been significantly reshaped in recent years by the emergence of novel theoretical frameworks that challenge traditional distinctions between naturalism and non-naturalism, reductive and non-reductive approaches, and analytic and synthetic methodologies. These new



frameworks reflect a growing sophistication in reductionist thinking, as philosophers develop more nuanced accounts of the relationship between moral properties and the natural world that avoid the pitfalls of earlier reductionist positions while preserving their core insights. By examining these emerging frameworks, we gain insight into the cutting edge of reductionist metaethics and the future trajectory of this philosophical approach.

One of the most significant developments in contemporary reductionist frameworks is the rise of metaethical constructivism, which attempts to ground moral properties in the practical standpoint of rational agents rather than in mind-independent natural properties. While constructivism has traditionally been associated with non-reductive approaches to morality, recent work by philosophers like Sharon Street, T.M. Scanlon, and David Enoch has developed constructivist positions that incorporate reductionist elements. Street's "Humean constructivism," for example, attempts to reduce moral properties to what a fully informed and rational agent would value from a practical standpoint, given our human nature and social circumstances. This approach reduces moral properties to hypothetical facts about rational evaluation rather than to mind-independent natural properties, offering a form of reductionism that avoids the is-ought problem by grounding morality in practical reason itself.

Another significant development is the emergence of "grounding" approaches to moral property reduction, which draw on contemporary metaphysics of grounding to provide a more sophisticated account of the relationship between moral and natural properties. The concept of grounding, which has become increasingly central in contemporary metaphysics, refers to the metaphysical dependence relation that holds between more fundamental and less fundamental entities. Philosophers like Ralf Bader, Kathrin Koslicki, and Gideon Rosen have applied this concept to metaethics, suggesting that moral properties are grounded in natural properties without being identical to them. This grounding approach allows for a more nuanced understanding of moral reductionism that can accommodate the supervenience of moral properties on natural properties while avoiding the strict identity claims of traditional reductionism. For example, the moral property of goodness might be grounded in the natural property of well-being without being identical to it, allowing for a more flexible account of moral properties that can accommodate their normative dimension.

The work of Terence Cuneo and Russ Shafer-Landau represents another important development in contemporary reductionist frameworks, particularly in their defense of "moral non-naturalism" that incorporates reductionist elements. In their book "Moral Realism: A Defence," Shafer-Landau argues that moral properties are non-natural but supervene on natural properties, suggesting that while moral properties are not reducible to natural properties in the traditional sense, they are still metaphysically dependent on them. This position, which Shafer-Landau calls "non-naturalist moral realism," attempts to preserve the distinctiveness of moral properties while acknowledging their dependence on the natural world. While not a reductionist position in the traditional sense, it incorporates reductionist insights about the relationship between moral and natural properties, reflecting a growing convergence between reductionist and non-reductionist approaches in contemporary metaethics.

The concept of "multiple realizability," which has been influential in philosophy of mind, has also been applied to new reductionist frameworks in metaethics. Philosophers like Frank Jackson and David Lewis

have developed “analytic functionalism” approaches to moral properties, suggesting that moral properties are defined by their functional roles rather than by their specific realizers. On this view, the moral property of rightness might be defined by its functional role in promoting certain ends (such as well-being or autonomy), and this functional role could be realized by different natural properties in different contexts. This functionalist approach allows for a form of reductionism that can accommodate the diversity of moral practices across cultures while still maintaining that moral properties are ultimately reducible to natural properties that realize their functional roles.

Another significant development is the emergence of “dispositionalist” approaches to moral properties, which draw on contemporary philosophy of science to understand moral properties as dispositions to produce certain responses in ideal observers. Philosophers like David Lewis and David Brink have developed dispositionalist accounts of moral properties, suggesting that moral properties are dispositions to elicit favorable responses from suitably qualified observers under ideal conditions. This approach reduces moral properties to dispositional properties that can be studied empirically, offering a form of reductionism that can accommodate the subjective dimension of moral judgment while still maintaining a realist understanding of moral properties.

The work of Richard Joyce represents another important development in contemporary reductionist frameworks, particularly in his defense of “fictionalist” approaches to morality that incorporate reductionist elements. In his book “The Myth of Morality,” Joyce argues that moral discourse is useful even if moral properties do not exist, because it helps us coordinate our behavior and express our attitudes in ways that promote social cooperation. While Joyce’s position is not strictly reductionist (since he denies the existence of moral properties), it incorporates reductionist insights about the natural functions of moral discourse, reflecting a growing trend toward hybrid positions that combine elements of reductionism with other metaethical approaches.

The emergence of these new reductionist frameworks reflects a broader trend in contemporary metaethics toward more nuanced and sophisticated accounts of the relationship between moral and natural properties. These frameworks attempt to avoid the pitfalls of earlier reductionist positions—such as the naturalistic fallacy, the is-ought problem, and the normativity objection—by developing more subtle accounts of moral reduction that can accommodate the distinctive features of moral properties while still maintaining their connection to the natural world. This evolution suggests that moral property reduction remains a vibrant and dynamic field of inquiry, continually adapting to new philosophical challenges and incorporating insights from diverse areas of philosophy.

## 11.2 Challenges from Experimental Philosophy

The traditional methods of philosophical inquiry into moral property reduction have been significantly challenged in recent years by the emergence of experimental philosophy, which applies empirical methods to philosophical questions. This new approach has raised profound questions about the relationship between philosophical theories of moral reduction and ordinary people’s understanding of moral concepts, potentially undermining the assumptions that underlie many reductionist approaches. By examining these challenges, we gain insight into how empirical research is transforming the debate about moral property reduction and

forcing philosophers to reconsider the relationship between philosophical theory and folk morality.

Experimental philosophy, or “x-phi” as it is often called, emerged in the early 2000s as a movement that challenged the traditional reliance on intuition and thought experiments in philosophical methodology. Instead of relying solely on armchair reflection, experimental philosophers use empirical methods—such as surveys, experiments, and statistical analysis—to investigate how ordinary people think about philosophical questions. This approach has been applied to a wide range of philosophical issues, including free will, consciousness, personal identity, and morality. In the domain of metaethics, experimental philosophy has raised particularly interesting questions about the relationship between philosophical theories of moral property reduction and ordinary people’s understanding of moral concepts.

One of the most significant challenges from experimental philosophy to moral property reduction comes from research on folk moral concepts, which suggests that ordinary people’s understanding of moral properties may be more complex and varied than philosophical theories typically assume. For example, research by Shaun Nichols and colleagues has investigated whether ordinary people are moral objectivists or relativists, finding that people’s intuitions about moral objectivism vary depending on the specific moral issue in question. This research challenges the assumption of many reductionist approaches that moral properties are objective features of reality that can be reduced to natural properties, suggesting instead that ordinary people may have more nuanced and context-dependent understandings of moral properties.

The work of Joshua Knobe represents another important challenge from experimental philosophy to traditional approaches to moral property reduction. Knobe’s research on the “side-effect effect” has shown that people’s moral judgments significantly influence their descriptive judgments about whether an agent intentionally caused an outcome. For example, when people are told that a corporate executive knowingly caused harm to the environment in order to increase profits, they tend to judge that the executive intentionally caused the harm; when told that the executive knowingly helped the environment in order to increase profits, they tend to judge that the executive did not intentionally help the environment. This asymmetry suggests that moral judgments are deeply intertwined with descriptive judgments in ways that many reductionist approaches fail to accommodate, challenging the assumption that moral properties can be cleanly separated from other types of properties.

Another significant challenge comes from research on moral semantics by Justin Sytsma and colleagues, which has investigated whether ordinary people understand moral properties as natural or non-natural properties. This research has produced mixed results, with some studies suggesting that people understand moral properties as natural properties that can be reduced to psychological or sociological facts, while other studies suggest that people understand moral properties as non-natural properties that cannot be reduced to natural facts. These findings challenge the assumption of many reductionist approaches that moral properties are obviously natural properties that can be reduced to other natural properties, suggesting instead that ordinary people’s understanding of moral properties may be more complex and varied.

The work of Geoffrey Goodwin and John Darley represents another important challenge from experimental philosophy to moral property reduction. In a series of studies, Goodwin and Darley investigated people’s metaethical commitments, finding that while most people are objectivists about morality, they also believe

that moral truths are knowable through intuition rather than through empirical investigation. This combination of objectivism and intuitionism challenges reductionist approaches that assume moral truths are knowable through empirical investigation of natural properties, suggesting instead that ordinary people may have a different understanding of how we know moral truths.

Experimental philosophy has also challenged the assumption of many reductionist approaches that moral properties are universal across cultures. Research by Richard Nisbett and colleagues has shown significant differences in cognitive styles between Western and Eastern cultures, with Westerners tending toward more analytic thinking and Easterners tending toward more holistic thinking. These differences in cognitive styles may lead to differences in how people understand moral properties, with Westerners more likely to understand moral properties as discrete, rule-governed entities that can be reduced to natural properties, and Easterners more likely to understand moral properties as holistic, context-dependent entities that resist reduction. This research challenges the assumption of many reductionist approaches that moral properties are universal across cultures, suggesting instead that cultural differences may lead to different understandings of moral properties.

In response to these challenges, reductionist philosophers have developed several strategies. One strategy, exemplified by the work of Joshua Greene, is to argue that experimental philosophy reveals the psychological origins of moral intuitions rather than their epistemic status. On this view, even if ordinary people have intuitions that moral properties are non-natural or known through intuition, these intuitions may be explained by evolutionary or cultural factors rather than by the true nature of moral properties. This approach allows reductionists to acknowledge the findings of experimental philosophy while still maintaining that moral properties are natural properties that can be reduced to other natural properties.

Another response, exemplified by the work of Shaun Nichols, is to argue that experimental philosophy reveals the diversity of folk metaethical intuitions rather than a single, coherent folk theory. On this view, ordinary people may have multiple, inconsistent ways of thinking about moral properties, making it difficult to draw firm conclusions about the true nature of moral properties from folk intuitions alone. This approach allows reductionists to acknowledge the complexity of folk moral concepts while still maintaining that philosophical theories of moral property reduction can be justified on independent grounds.

A third response, exemplified by the work of David Enoch, is to argue that experimental philosophy is irrelevant to the philosophical debate about moral property reduction because philosophical questions about the nature of moral properties are fundamentally different from empirical questions about how people think about moral properties. On this view, even if ordinary people have intuitions that moral properties are non-natural or known through intuition, these intuitions do not settle the philosophical question of whether moral properties are actually natural properties that can be reduced to other natural properties. This approach allows reductionists to dismiss the findings of experimental philosophy as irrelevant to the philosophical debate.

Despite these responses, the challenges from experimental philosophy have significantly transformed the debate about moral property reduction, forcing reductionist philosophers to engage more deeply with empirical research and to reconsider the relationship between philosophical theory and folk morality. This engagement has led to more sophisticated reductionist approaches that can accommodate the complexity and diversity of

folk moral concepts, while still maintaining the core insight that moral properties are ultimately reducible to natural properties. The ongoing dialogue between experimental philosophy and reductionist metaethics promises to continue generating new insights and challenges, enriching our understanding of both moral properties and the methods we use to investigate them.

### 11.3 Cross-Disciplinary Approaches to Moral Reduction

The traditional boundaries between philosophy and other academic disciplines have become increasingly permeable in recent years, as philosophers have collaborated with scientists from diverse fields to develop more comprehensive approaches to moral property reduction. These cross-disciplinary approaches draw on insights from psychology, neuroscience, evolutionary biology, anthropology, economics, and computer science to develop more empirically grounded and scientifically informed accounts of moral properties. By examining these collaborative efforts, we gain insight into how moral property reduction is being transformed by cross-disciplinary research and how these new approaches are addressing longstanding philosophical challenges.

One of the most significant cross-disciplinary approaches to moral property reduction is the collaboration between philosophers and psychologists in the field of moral psychology. This research has investigated the psychological mechanisms underlying moral judgment, with implications for how we understand the nature of moral properties. For example, the work of Jonathan Haidt and colleagues on social intuitionism has shown that moral judgments are often driven by intuitive emotional responses rather than by rational deliberation, challenging the traditional philosophical assumption that moral judgments are primarily cognitive in nature. This research has been incorporated into reductionist approaches by philosophers like Jesse Prinz, who argue that moral properties reduce to emotional responses that have been shaped by evolution and culture. On this view, the moral property of “wrongness” reduces to the emotional property of “eliciting disgust,” while the moral property of “rightness” reduces to the emotional property of “eliciting approval.” This psychologic reductionism offers an empirically grounded account of moral properties that can explain their motivational force and their variation across cultures.

Another significant cross-disciplinary approach is the collaboration between philosophers and neuroscientists in the field of neuroethics. This research has used neuroimaging techniques to investigate the neural correlates of moral judgment, with implications for how we understand the relationship between moral properties and brain states. For example, the work of Joshua Greene and colleagues has shown that different types of moral judgments activate different brain regions, with personal moral dilemmas (involving direct physical harm) tending to activate emotional brain regions like the amygdala, and impersonal moral dilemmas (involving more abstract harm) tending to activate cognitive brain regions like the dorsolateral prefrontal cortex. This research has been incorporated into reductionist approaches by philosophers like Pat Churchland, who argue that moral properties reduce to neural states that have been shaped by evolution to promote social cooperation. On this view, the moral property of “fairness” reduces to neural states that activate the reward system when resources are distributed equitably, while the moral property of “unfairness” reduces to neural states that activate the punishment system when resources are distributed inequitably. This neuroscientific reductionism offers a biologically grounded account of moral properties that can explain their universality

across cultures and their connection to human well-being.

The collaboration between philosophers and evolutionary biologists has also produced significant developments in cross-disciplinary approaches to moral property reduction. This research has investigated the evolutionary origins of moral judgments, with implications for how we understand the function of moral properties. For example, the work of Robert Trivers on reciprocal altruism has shown how moral behaviors like cooperation and punishment could have evolved to enhance fitness in social groups, challenging the traditional philosophical assumption that moral properties are *sui generis* entities that cannot be explained by natural processes. This research has been incorporated into reductionist approaches by philosophers like Peter Singer, who argue that moral properties reduce to properties that enhance inclusive fitness. On this view, the moral property of “altruism” reduces to behaviors that enhance the reproductive success of genetic relatives, while the moral property of “justice” reduces to mechanisms that enforce reciprocal cooperation. This evolutionary reductionism offers a historically grounded account of moral properties that can explain their adaptive value and their variation across species.

The collaboration between philosophers and anthropologists has also produced important developments in cross-disciplinary approaches to moral property reduction. This research has investigated moral practices across cultures, with implications for how we understand the universality and diversity of moral properties. For example, the work of Richard Shweder on cultural psychology has shown how different cultures emphasize different moral domains, with Western cultures emphasizing individual rights and autonomy, and traditional cultures emphasizing community, divinity, and hierarchy. This research has been incorporated into reductionist approaches by

## 1.12 Conclusion and Future Directions for Moral Property Reduction

The cross-disciplinary collaboration between philosophers and anthropologists has revealed the rich tapestry of moral practices across human societies, demonstrating both the diversity and underlying unity of moral phenomena. These investigations have provided empirical grounding for reductionist approaches while simultaneously highlighting the complexities that any comprehensive account of moral properties must accommodate. As we reach the conclusion of our exploration of moral property reduction, it is fitting to step back and synthesize the insights gained throughout our journey, evaluating the current state of reductionism as a philosophical position and considering the paths that future inquiry might take. The debate over moral property reduction represents one of the most fundamental and enduring controversies in metaethics, touching on core questions about the nature of reality, the limits of human understanding, and the place of value in the universe. By synthesizing this debate, acknowledging unresolved challenges, identifying promising avenues for future research, and reflecting on the enduring significance of moral property reduction, we can appreciate both the achievements of reductionist approaches and the work that remains to be done.

### 12.1 Synthesizing the Debate on Moral Property Reduction

The debate over moral property reduction has evolved considerably since its earliest formulations in ancient Greek philosophy, yet it continues to revolve around a set of core questions about the relationship between



moral properties and the rest of reality. At its heart, this debate concerns whether moral properties like goodness, rightness, and justice can be understood in terms of more fundamental non-moral properties, or whether they represent irreducible features of reality that must be accepted on their own terms. Our exploration of this debate has revealed a rich philosophical landscape characterized by sophisticated arguments, nuanced positions, and ongoing dialogue between reductionist and non-reductionist approaches.

The historical development of moral property reduction shows a trajectory from ancient naturalistic approaches through medieval theological conceptions to early modern attempts to ground morality in human nature and social contract theory. The twentieth century witnessed both the rise of logical positivism and its influence on moral reductionism and the emergence of powerful objections to reductionist approaches, most notably G.E. Moore's Open Question Argument and J.L. Mackie's Argument from Queerness. These objections challenged reductionists to explain how moral properties, with their distinctive normative dimension, could be reduced to natural properties without losing what makes them specifically moral.

In response to these challenges, contemporary reductionists have developed increasingly sophisticated frameworks that attempt to accommodate the normativity of moral properties while maintaining their commitment to naturalism. These frameworks include reductive naturalism, which identifies moral properties with natural-scientific properties; functional reductionism, which defines moral properties by their causal or functional roles; and more recent approaches that draw on contemporary metaphysics of grounding and dispositionalism. Each of these approaches attempts to navigate the delicate balance between reducing moral properties to more fundamental properties and preserving their distinctive normative character.

The arguments in favor of moral property reduction have centered on several key considerations. Arguments from ontological parsimony suggest that reductionism offers a more economical metaphysics by avoiding the proliferation of irreducible moral properties. Arguments from causal efficacy maintain that only natural properties can genuinely cause effects in the world, implying that moral properties must be natural if they are to play a role in explaining human behavior. Arguments from supervenience suggest that the best explanation for the dependence of moral properties on natural properties is that moral properties are constituted by natural properties. Arguments from moral progress and disagreement suggest that reductionism provides the most plausible account of how moral knowledge advances and how moral disagreements can be rationally resolved.

Critics of moral property reduction have advanced powerful objections that continue to shape the debate. The Open Question Argument, though modified and refined in contemporary discussions, challenges reductionists to explain why moral questions remain open even if we know all the relevant natural facts. The Argument from Queerness questions how moral properties, with their distinctive normative dimension, could fit into a naturalistic worldview. The Normativity Objection argues that reductionism cannot capture the essential action-guiding nature of morality without losing sight of what makes moral judgments distinctively normative. The Multiple Realizability Objection contends that moral properties are too diverse and context-dependent to be reduced to specific natural properties.

The relationship between moral property reduction and other metaethical positions reveals both points of convergence and divergence. While reductionism differs fundamentally from non-naturalism in its commit-

ment to naturalism, it shares with non-reductive naturalism the view that moral properties are in some sense natural properties. The debate between reductionism and non-cognitivism centers on whether moral statements express beliefs about moral properties or non-cognitive attitudes, with reductionists maintaining that moral statements express beliefs about natural properties. The dialogue between reductionism and error theory concerns whether moral discourse aims to describe moral properties that actually exist, with reductionists arguing that moral discourse successfully describes natural properties that constitute moral value.

Scientific approaches to moral property reduction have enriched the debate by providing empirical perspectives on the nature of moral properties. Evolutionary approaches suggest that moral properties might be understood in terms of properties that conferred evolutionary advantages on our ancestors. Neuroscientific approaches investigate the neural correlates of moral judgment, suggesting that moral properties might reduce to patterns of neural activity. Psychological approaches examine the cognitive and emotional processes underlying moral judgment, suggesting that moral properties might reduce to psychological properties. Anthropological and sociological approaches study moral practices across cultures, suggesting that moral properties might reduce to social properties that promote cooperation and social cohesion.

The cultural and social dimensions of moral property reduction highlight its implications for understanding moral diversity, social progress, applied ethics, and moral education. Reductionism can accommodate cultural variation in moral systems by distinguishing between universal moral capacities and culturally specific moral outputs. It provides resources for evaluating social progress by identifying the natural properties that constitute moral value. It offers frameworks for addressing practical ethical dilemmas in fields like bioethics, environmental ethics, and business ethics. It suggests approaches to moral education that focus on developing the knowledge and skills needed to identify and promote the natural properties that constitute moral value.

The practical implications of moral property reduction extend to virtually every domain of human activity where moral reasoning plays a role. In moral reasoning and decision-making, reductionism suggests focusing on the natural properties that constitute moral value rather than on abstract moral principles. In legal and political theory, reductionism suggests grounding legal and political justification in natural properties that can be empirically investigated. In artificial intelligence and machine ethics, reductionism suggests programming AI systems to promote the natural properties that constitute moral value. In personal and interpersonal relationships, reductionism suggests focusing on the natural properties that promote well-being, autonomy, and social connection.

Contemporary debates and developments in moral property reduction reflect the evolving nature of this philosophical approach. New reductionist frameworks, including metaethical constructivism, grounding approaches, functionalist accounts, and dispositionalist theories, offer more nuanced understandings of the relationship between moral and natural properties. Challenges from experimental philosophy raise questions about the relationship between philosophical theories of moral reduction and ordinary people's understanding of moral concepts. Cross-disciplinary approaches draw on insights from diverse fields to develop more empirically grounded and scientifically informed accounts of moral properties. Global and comparative perspectives highlight the need for reductionist approaches that can accommodate the diversity of moral

concepts across cultures while still identifying universal elements.

As we synthesize this debate, several key insights emerge. First, moral property reduction represents a vibrant and dynamic field of inquiry that continues to evolve in response to new challenges and insights. Second, the debate between reductionist and non-reductionist approaches is not a simple opposition but a complex dialogue characterized by increasing sophistication and nuance. Third, reductionist approaches have developed increasingly sophisticated frameworks that attempt to accommodate the normativity of moral properties while maintaining their commitment to naturalism. Fourth, scientific approaches to moral property reduction have enriched the debate by providing empirical perspectives on the nature of moral properties. Fifth, the practical implications of moral property reduction extend to virtually every domain of human activity, highlighting its relevance beyond academic philosophy.

## 12.2 Unresolved Questions and Challenges

Despite the significant progress in developing and refining reductionist approaches to moral properties, several fundamental questions and challenges remain unresolved. These persistent issues represent the frontier of contemporary debate about moral property reduction, pointing to areas where further research and reflection are needed. By examining these unresolved questions and challenges, we gain insight into the limitations of current reductionist approaches and the work that remains to be done in developing a comprehensive account of moral properties.

Perhaps the most fundamental unresolved question concerns the nature of moral normativity itself. Reductionists have proposed various strategies for accommodating the normativity of moral properties within a naturalistic framework, from identifying moral properties with natural properties that inherently motivate us to defining moral properties in terms of their functional roles in promoting human flourishing. However, critics argue that these strategies fail to capture the distinctive “oughtness” of moral judgments—their unique capacity to provide categorical reasons for action that apply regardless of our desires or interests. This challenge, most forcefully articulated by non-naturalists like Derek Parfit and T.M. Scanlon, questions whether any naturalistic account can fully explain the normativity of moral properties without either distorting their nature or eliminating their distinctive normative force. The difficulty of reconciling naturalism with normativity represents perhaps the most persistent and intractable challenge facing moral property reduction.

Another unresolved question concerns the relationship between moral properties and the diverse ways in which they are realized across different cultures, contexts, and individuals. The multiple realizability objection challenges reductionists to explain how moral properties can be reduced to natural properties when they appear to be realized by such diverse natural properties in different contexts. For example, the moral property of justice might be realized by different social, political, and economic arrangements in different cultures, raising questions about whether there is any single natural property that all these realizations share. Reductionists have responded to this challenge in various ways, from proposing that moral properties are defined by their functional roles rather than by their specific realizers to suggesting that moral properties are multiply realized by dispositions that can be identified across different contexts. However, critics argue that these responses either fail to provide genuine reductions or collapse into non-reductive accounts that preserve the distinctiveness of moral properties.

The epistemology of moral properties represents another area of unresolved challenge for reductionist approaches. If moral properties reduce to natural properties, then we should be able to know them through the same methods we use to know other natural properties—observation, experimentation, inference to the best explanation, and so forth. However, moral disagreement persists even among well-informed and rational agents, raising questions about whether moral properties are as accessible to empirical investigation as other natural properties. Reductionists have proposed various solutions to this challenge, from suggesting that moral disagreements often stem from disagreements about non-moral facts to proposing that moral knowledge requires a distinctive form of moral perception that is analogous to perception in other domains. However, critics argue that these solutions either underestimate the extent and depth of moral disagreement or rely on epistemological mechanisms that are not well understood.

The relationship between moral properties and evolutionary explanations presents another unresolved challenge. Evolutionary approaches to morality suggest that moral judgments and behaviors evolved because they enhanced the inclusive fitness of our ancestors, raising questions about whether moral properties can be identified with these evolutionary properties. Reductionists have proposed various ways of reconciling evolutionary explanations with moral realism, from suggesting that evolution has equipped us with cognitive mechanisms that can track moral properties to proposing that moral properties are identical to the properties that evolution has selected for. However, critics argue that these approaches face a dilemma: either moral properties are the products of evolution, in which case they would seem to depend on contingent facts about our evolutionary history rather than being objective features of reality, or moral properties are independent of evolution, in which case it is mysterious why evolution would have equipped us with cognitive mechanisms that can track them.

The semantic challenge of moral property reduction remains unresolved despite decades of debate. If moral properties reduce to natural properties, then moral terms should refer to these natural properties, and moral statements should be analyzable in terms of statements about these natural properties. However, the Open Question Argument, though modified and refined in contemporary discussions, continues to challenge reductionists to explain why questions about the identification of moral properties with natural properties remain meaningful and non-trivial even if we know all the relevant natural facts. Reductionists have responded to this challenge in various ways, from suggesting that moral terms refer to natural properties that play a certain causal role to proposing that moral terms are rigid designators that pick out the same natural property in all possible worlds. However, critics argue that these responses either fail to address the core intuition behind the Open Question Argument or rely on controversial semantic theories that have independent problems.

The challenge of moral motivation represents another unresolved question for reductionist approaches. If moral properties reduce to natural properties, then moral judgments should motivate us in virtue of representing these natural properties. However, the connection between moral judgment and motivation appears to be more intimate than the connection between ordinary descriptive judgments and motivation, raising questions about whether any purely descriptive account of moral properties can explain this connection. Reductionists have proposed various solutions to this challenge, from suggesting that moral judgments involve both cognitive and conative states to proposing that moral properties are inherently connected to motivation by their very nature. However, critics argue that these solutions either fail to provide genuine reductions or

collapse into non-cognitivist accounts that deny that moral judgments are purely cognitive.

The relationship between moral properties and moral progress presents another area of unresolved challenge. If moral properties reduce to natural properties, then moral progress should consist in better understanding and promoting these natural properties. However, the concept of moral progress itself raises questions about whether there is objective improvement in moral beliefs and practices over time, or whether apparent progress simply reflects changing social and cultural attitudes. Reductionists have proposed various ways of understanding moral progress, from suggesting that progress consists in expanding our moral concern to include more beings to proposing that progress consists in developing institutions that better realize the natural properties that constitute moral value. However, critics argue that these conceptions of progress either rely on controversial normative assumptions or fail to explain why certain changes should be considered progress rather than mere change.

The challenge of integrating scientific findings with philosophical theories of moral property reduction remains unresolved. Scientific approaches to morality have produced a wealth of empirical findings about the psychological, neural, and evolutionary bases of moral judgment, raising questions about how these findings should inform philosophical theories of moral properties. Reductionists have proposed various ways of integrating scientific findings with philosophical theories, from suggesting that science can identify the natural properties that constitute moral value to proposing that science can explain why we make the moral judgments we do. However, critics argue that these approaches either commit the naturalistic fallacy by deriving normative conclusions from descriptive premises or fail to address the distinctive normative dimension of moral properties.

These unresolved questions and challenges do not necessarily show that moral property reduction is mistaken, but they do indicate that current reductionist approaches face significant difficulties that require further research and reflection. The persistence of these challenges suggests that the debate about moral property reduction will continue to be a central focus of metaethical inquiry for the foreseeable future, as philosophers develop increasingly sophisticated approaches to understanding the relationship between moral properties and the rest of reality.

### 12.3 Promising Avenues for Future Research

Despite the unresolved questions and challenges facing moral property reduction, several promising avenues for future research have emerged in recent years. These directions reflect the evolving nature of the debate and the increasing sophistication of reductionist approaches to moral properties. By examining these promising avenues, we gain insight into how the field of moral property reduction might develop in the coming years and how persistent challenges might be addressed.

One particularly promising avenue for future research is the further development of grounding approaches to moral property reduction. The concept of grounding has become increasingly central in contemporary metaphysics, offering a nuanced way of understanding the relationship between more fundamental and less fundamental entities. Applied to metaethics, grounding approaches suggest that moral properties are grounded in natural properties without being identical to them, allowing for a more flexible account of moral reduction that can accommodate the supervenience of moral properties on natural properties while avoiding the strict

identity claims of traditional reductionism. Future research in this direction could explore different models of grounding relationships, investigate how grounding approaches can address the normativity objection, and examine how grounding approaches relate to other reductionist frameworks. The work of philosophers like Ralf Bader, Kathrin Koslicki, and Gideon Rosen provides a foundation for this research, but much remains to be done in developing a comprehensive grounding account of moral properties.

Another promising avenue is the integration of experimental philosophy with traditional approaches to moral property reduction. Experimental philosophy has produced a wealth of empirical findings about how ordinary people understand moral concepts, raising questions about the relationship between philosophical theories of moral reduction and folk morality. Future research in this direction could investigate how experimental findings can inform the development of reductionist theories, explore the implications of cultural variation in moral concepts for reductionist accounts, and examine how experimental methods can be used to test the predictions of different reductionist theories. The work of experimental philosophers like Joshua Knobe, Shaun Nichols, and Geoffrey Goodwin provides a starting point for this research, but there is significant potential for further collaboration between experimental philosophers and metaethicists working on moral property reduction.

The development of more sophisticated functionalist approaches to moral property reduction represents another promising avenue for future research. Functionalism, which has been influential in philosophy of mind, suggests that properties are defined by their functional roles rather than by their specific realizers. Applied to metaethics, functionalism suggests that moral properties are defined by their causal or functional roles in promoting certain ends, such as human flourishing or social cooperation. Future research in this direction could explore different conceptions of the functional roles of moral properties, investigate how functionalist approaches can address the multiple realizability objection, and examine how functionalist approaches relate to other reductionist frameworks. The work of philosophers like Frank Jackson, David Lewis, and David Brink provides a foundation for this research, but there is significant potential for further development of functionalist accounts of moral properties.

The integration of cross-disciplinary approaches with traditional philosophical methods represents another promising avenue for future research. As we have seen throughout this article, scientific approaches to morality have produced a wealth of empirical findings about the psychological, neural, and evolutionary bases of moral judgment. Future research in this direction could explore how these empirical