Introduction

A survey of pollution beliefs from cultures around the world over the span of recorded history reveals a remarkable commonality in the types of phenomena viewed as causing impurity. These tend to include corpses, genital emissions (ordinary and pathological), certain animals and disease. How is this striking commonality in disparate cultures to be explained? Before attempting to answer, let us frame the object of investigation in more familiar terms.

Imagine the following scenario: you are staying in a hotel room and wake up to find your bed infested with swarming insects. Fortunately, the front desk assures you that they are perfectly harmless, and, in any case, you were fully clothed. Under these circumstances, would you:

A. Bathe or shower immediately
B. Promptly check out of the hotel and then find a place to bathe or shower
C. Go back to sleep

If you answered A or B to this question, then the notion of pollution should not seem so strange. This psychological response of "contagion" can be defined as the perceived transfer of a negative essence from a source to a target.[1] As several mundane examples can show, there is nothing

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[1] Carol Nemeroff and Paul Rozin pioneered the research on the "contagion" response in the 1990s, as summarized in these more recent summaries: "The Makings of the Magical Mind: The Nature and Function of Sympathetic Magical Thinking," in *Imagining the Impossible: Magical, Scientific and Religious Thinking in Children*, eds. K. S. Rosengren, C. N. Johnson and P. L. Harris (Cambridge: Cambridge University Press, 2000), 1–34; "Sympathetic Magical Thinking: The Contagion and Similarity 'Heuristics,'" in *Heuristics*

particularly mystical about the spread of an invisible essence. We experience *actual* contagion in numerous domains: the handling of a smelly object transfers its odor, interaction with a sick individual leads to infection and so on. It is hardly surprising, therefore, that these everyday experiences shape our expectations when interacting with our environment.

The word "contagion" is meaningfully ambivalent, bearing important implications for human psychology. In its everyday usage, it usually refers to the infectiousness of disease. In modern psychological research, however, contagion (also known as "contamination") refers to the "interpretation or response to situations in which *physical contamination* may have occurred."[2] For example, psychological contagion refers to the fact that many people feel a need to wash their hands after touching an animal carcass. As you may have noticed, this definition is illicit: the term is reused in its definition. Though violating a cardinal rule of dictionaries, this definition captures a fascinating aspect of psychological contagion: one's internal response seems to be perfectly attuned to external reality. Contagion seems to emerge at the point where the boundary between mind and world all but dissolves.[3] This startling phenomenon has not eluded evolutionary psychologists. For example, one group of researchers has commented on how disgust "amounts to an implicit germ theory."[4] How did this vital tendency to avoid sources of pathogens emerge in us? Is our aversion to pollution based on Darwinian self-protective instincts? And if so, how were the triggers determined?

This book is dedicated to solving the puzzle of contagion. Its point of departure is the Hebrew Bible, but the scope of the question pertains to all

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and Biases: The Psychology of Intuitive Judgment, eds. T. Gilovich, D. W. Griffin and D. Kahneman (Cambridge: Cambridge University Press, 2002), 201–216. This response is often termed "contamination appraisals" in current research.

[2] Paul Rozin and April E. Fallon, "A Perspective on Disgust," *Psychological Review* 94.1 (1987): 29 (emphasis added).

[3] This subtle point was articulated by Gregory Bateson as follows: "In the natural history of the living human being, ontology and epistemology cannot be separated. His (commonly unconscious) beliefs about what sort of world it is will determine how he sees it and acts within it, and his ways of perceiving and acting will determine his beliefs about its nature. The living man is thus bound within a net of epistemological and ontological premises which – regardless of ultimate truth or falsity – become partially self-validating for him" (*Steps to an Ecology of Mind* [Chicago: University of Chicago Press, 1972], 314).

[4] Megan Oaten, Richard J. Stevenson and Trevor I. Case, "Disgust as a Disease Avoidance Mechanism: A Review and Model," *Psychological Bulletin* 135 (2009): 303–332 (313); see also Paul Rozin, Jonathan Haidt and Clark R. McCauley, "Disgust," in *Handbook of Emotions*, eds. M. Lewis, J. M. Haviland-Jones and L. F. Barrett, 3rd ed. (New York: Guilford Press, 2008), 757–776.

humans and all times. The rest of this chapter is dedicated to introducing the key theoretical principles which guide my approach. The next section will situate the current study in relation to previous trends in the investigation of pollution. The discussion will present a central theme of this book, the relation between language and experience, examining how each of these dimensions needs to be confronted in dealing with biblical pollution. As an initial illustration, these principles are applied to understanding semantics of purity in the ancient Near East. The final sections survey the bodies of evidence that will serve as the basis for this study and set forth its broader aims as a synthesis of sciences and humanities. The chapter closes with an appendix which offers a more detailed overview of the key insights of embodied cognition as they are applied in this book.

POINT OF DEPARTURE

Whenever the topic of purity is mentioned in academic discourse in general, and in relation to ancient Israel in particular, discussion turns quickly to anthropologist Mary Douglas' groundbreaking study *Purity and Danger*, published in 1966. As a theoretical work that maintains a pervasive influence in multiple disciplines over fifty years after its publication, it was clearly a rare scholarly achievement.

From the outset, a rather surprising point needs to be stated plainly. The *Purity and Danger* that pops into scholars' minds when the word "purity" is mentioned is usually based on a few selected passages from the book. Douglas' literary executor and intellectual biographer Richard Fardon makes the following revealing observations:

Being so well known, I had thought that *Purity and Danger* would yield to succinct summary; but rereading it several times, two decades after I last read it cover to cover, I realized how selective my memory of it had become. This would not be worth mentioning, except that other accounts of how to read *Purity and Danger* (including some by Mary Douglas herself) also dwell upon elements of the book's argument to the detriment of the book as a whole.[5]

Remarkably, the modern reception of *Purity and Danger* has tended to focus on a few key passages, while ignoring the complexity, equivocation and problematic aspects of the book as a whole.[6] Furthermore, as far as

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[5] *Mary Douglas: An Intellectual Biography* (London/New York, NY: Routledge, 2001), 79.
[6] In Fardon's sympathetic sequential reading of the text, the critical issue of the book is not the topic of impurity but rather a reflection on the role of anthropological discourse in framing "the question of the differences between 'them' (primitives) and 'us' (moderns)"

the Hebrew Bible is concerned, Douglas abandoned many of her own lines of interpretation in her later books.[7]

One of the most enduring contributions of *Purity and Danger* is the possibility that the grimy details of impurity rules can be sublimated to an abstract symbolic discourse on order and disorder. Indeed, a provocative offshoot of this general approach is the view that death, bodily emissions and impure animals have significance beyond bare materialistic concerns, serving as means to represent and maintain social and intellectual boundaries. Yet, it should be recognized that Douglas never even attempts to explain how this symbolic discourse unconsciously emerges. In her efforts to see beyond the nitty-gritty details of purity practices, Douglas never fully accounted for the fact that they remain seated in the body, specifically those less pleasant aspects of it, and that it is precisely in these details that one finds a startling degree of commonality between disparate cultures.

In recent decades, evolutionary psychologists have addressed this lacuna with their etiology of bodily disgust. According to these accounts, disgust serves an adaptive function in protecting individuals against pathogen threats.[8] This evolutionary explanation offers a plausible account for the universality of disgust elicitors, such as disease, vermin, corpses and the like.[9] In recent years, Thomas Kazen is to be credited for applying these insights to pollution in the Hebrew Bible and ancient Judaism, arguing compellingly that naturalistic (evolutionary) and cultural modes of explanation need not be viewed as contradictory.[10]

(ibid., 83). The key point here is that *Purity and Danger* was not necessarily intended to be a systematic treatise on purity as much as a commentary on anthropological method.

[7] As Fardon incisively points out, "Scholars who continue to refer to the thirty-year-old analysis of *Purity and Danger* as if it were Douglas's last word on the subject should at least recognize that the famous 'abominations' of Leviticus are, in Douglas's later view, not abominations at all, and that the 'message' of the editors of Leviticus is not one of ethnic exclusivity" (ibid., 204).

[8] Steven Neuberg, Douglas T. Kenrick and Mark Schaller, "Human Threat Management Systems: Self-Protection and Disease Avoidance," *Neuroscience and Biobehavioral Reviews* 35.4 (2011): 1042–1051; Mark Schaller and Justin H. Park, "The Behavioral Immune System (and Why It Matters)," *Current Directions in Psychological Science* 20.2 (2011): 99–103.

[9] Rozin, Haidt and McCauley, "Disgust"; Daniel Kelly, *Yuck! The Nature and Moral Significance of Disgust* (Cambridge, MA: MIT Press, 2011); Oaten, Stevenson and Case, "Disgust as a Disease Avoidance Mechanism"; Valerie Curtis, Mícheál de Barra and Robert Aunger, "Disgust as an Adaptive System for Disease Avoidance Behavior," *Philosophical Transactions of the Royal Society B: Biological Sciences* 366 (2011): 389–401; Valerie Curtis, *Don't Look, Don't Touch, Don't Eat: The Science Behind Repulsion* (Oxford: Oxford University Press, 2013).

[10] Thomas Kazen, "Impurity, Ritual, and Emotion: A Psycho-Biological Approach," in *Issues of Impurity in Early Judaism* (Winona Lake, IN: Eisenbrauns, 2010), 13–40; Eve

Yet, questions remain. Is it really disgust that can account for all of the types of defilement? How does disgust develop into fully articulated notions of pollution? As will be seen, an attempt to address these broad theoretical questions can lead to striking new understandings of the ancient textual sources. To refine the discussion further, it is necessary to address the relation between language and experience. First, however, it is necessary to examine more closely each side of the equation: the language of pollution and the phenomenon of contagion.

LINGUISTIC PITFALLS OF PURITY

In studying the phenomena of purity and pollution, the potential for terminological confusion is twofold. First of all, it is necessary to recognize that our (etic) analytic vocabulary is fluid and often lacks any criteria delineating what distinguishes purportedly scientific anthropological concepts from the semantics of the relevant terms in our everyday language. Just as products boasting of their "purity" beckon to us from every shelf of the supermarket, on the packages of anything from toilet cleaners to spearmint chewing gum, so too the language of pollution is found in a wide array of domains (most obviously the environmental) which have little bearing on the question at hand. This fluidity would not pose a problem if it were not for the fact that academic conferences and volumes on purity and pollution are often structured by these vernacular usages.

The obvious remedy is to pay attention to the correspondence between our analytic terminology and the emic terms of the culture being studied, but here a second, subtler, source of confusion awaits. The frustrating fact is that even the "native" terminologies are imprecise, serving as generic terms for a heterogeneous group of phenomena. For example, the Biblical Hebrew term for pollution *ṭum'ah* is relatively rare (36 x in the Hebrew Bible) and constitutes a reification of the much more common adjective *ṭam'e* (87 x). In other words, the noun is derivative from the adjective, just as the English "im/purity" and German "un/reinheit" are derivative of their respective adjectives ("im/pure"; "un/rein").[11] This lexicographical observation has important semantic implications, since *ṭum'ah* can have different usages, referring to the source of pollution as well as the state

Levavi Feinstein, *Sexual Pollution in the Hebrew Bible* (Oxford: Oxford University Press, 2014), 11–41.

[11] The priority of the adjectival form is evident from the nominalizing suffixes -ity in English and -*heit* in German.

transferred to the recipient of pollution. Moreover, even when referring to the causes of pollution, this term serves as a generic umbrella category for a heterogeneous array of sources, including disease, impure animals and corpses, each of which operates according to very different rules.[12]

Here we might keep in mind Ludwig Wittgenstein's famous discussion of "games":

Consider, for example, the activities we call "games." I mean board-games, card-games, ball-games, athletic games, and so on. What is common to them all? – Don't say: "They *must* have something in common, or they would not be called 'games'" – but *look and see* whether there is anything common to all.[13]

Similarly, we cannot take terms like "purity" and "pollution" as being self-understood. Even Mary Douglas herself, reflecting on *Purity and Danger* thirty-eight years later, came to realize the danger of the word "purity":

"Purity" is one of those traps for the scholarly that Wittgenstein warned us about, a typical philosophical problem about words. Sometimes the screen of my PC goes blank and a little box appears with the message: "You have done an illegal action," then appears an error number and a penalty. It is often like this when we use the word "purity": we get into trouble when we seem to assign it some specific existence.[14]

When seeking to reconstruct native conceptions based on texts, it is necessary to ask whether they are systematic or even coherent. The situation becomes even more complicated when one seeks to address additional crucial variables, such as multiplicity of viewpoints within a culture and changing attitudes over time. These problems bear also on the distinction between literal and rhetorical usages: is it possible to distinguish "real" impurity from "metaphorical" impurity? In order to answer questions such as this, it is necessary to clarify what in the world of experience was referred to by terms like *ṭum'ah*.

CONTAGION AND EXPERIENCE

As pointed out above, disgust research has made a significant contribution to the study of pollution. One aspect of disgust that is highly relevant is its "domain-specificity," referring to the fact that participants in these studies

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[12] See next chapter for further discussion of these points.
[13] Ludwig Wittgenstein, *Philosophical Investigations*, trans. G. E. M. Anscombe, P. M. S. Hacker and J. Schulte (Chichester: Wiley-Blackwell, 2009), 36e (§66).
[14] *Jacob's Tears: The Priestly Work of Reconciliation* (Oxford: Oxford University Press, 2006), 159.

respond differently to different types of contamination, be it excrement, tuberculosis or bedbugs.[15] In particular, these various contaminants are treated differently in their modes of transmission, their perceived ramifications and the means for their cleansing.[16] Where do these intuitions come from? Are we born with this capability to identify different types of threat and respond accordingly? To claim that "disgust" can explain this sophisticated capability is little more than hand-waving.

Accordingly, one may ask whether "disgust" is the best term to describe the contagion response. One way to solve this problem is to define "disgust" broadly, as does Valerie Curtis, who identifies it with "the system in brains that drives parasite-avoidance behavior."[17] Still, expanding the scope of "disgust" does not amount to an explanation. A more accurate point of departure is to admit that contagion relates to avoidance emotions more generally, including disgust and fear. To appreciate this last point, it is worth pointing out that the analytic term "disgust" and its designation as a basic emotion entails imposing a somewhat arbitrary boundary onto the emotional landscape.[18] Can either label – "disgust" or "fear" – by itself do justice to the feeling of waking up in an insect-infested bed?

In psychological research, avoidance emotions – and disgust in particular – serve to curb the individual's appetite in the domains of eating and sexuality. It is the possibilities of close contact and oral ingestion of an unwanted entity that elicit vigilant expressions of these emotions. Here it is necessary to stress the primal character of these avoidance emotions, which is most evident in the central role of the olfactory system of the brain, responsible for smell.[19] Theoretical neuroscientist Walter J. Freeman III writes: "The nose was and is the final arbiter of what we

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[15] E.g., Bunmi O. Olatunji, Craig Ebesutani, Jonathan Haidt and Chad N. Sawchuk, "Specificity of Disgust Domains in the Prediction of Contamination Anxiety and Avoidance: A Multimodal Examination," *Behavior Therapy* 45.4 (2014): 469–481.

[16] For more detailed discussion, see Yitzhaq Feder, "Contamination Appraisals, Pollution Beliefs and the Role of Cultural Inheritance in Shaping Disease Avoidance Behavior," *Cognitive Science* 40.6 (2016): 1561–1585.

[17] Curtis, *Don't Look*, 34.

[18] James A. Russell, "Core Affect and the Psychological Construction of Emotion," *Psychological Review* 110.1 (2003): 145–172; See Lisa Feldman Barrett, "Are Emotions Natural Kinds?" *Perspectives on Psychological Science* 1.1 (2006): 28–58; Giovanna Colombetti, *The Feeling Body: Affective Science Meets the Enactive Mind* (Cambridge, MA: MIT Press, 2014), 25–82.

[19] Kai Qin Chan et al., "Disgust and Fear Lower Olfactory Threshold," *Emotion* 16.5 (2016): 740–749; Martin Kavaliers, Klaus-Peter Ossenkopp and Elena Choleris, "Social Neuroscience of Disgust," *Genes, Brain and Behavior* 18.1 (2019): e12508.

ingest and of what we are afraid."[20] These observations can go a long way toward explaining the relationship between foul odors and pollution in the Hebrew Bible and elsewhere.[21] As will be seen in the chapters that follow, smell seems to play a key role in detecting sources of impurity in relation to foods, corpses and sex. Still, one cannot dismiss the role of other sensory modalities through which disgust and fear can be elicited.

Even recognizing the importance of these affective mechanisms, they can only go so far in explaining how humans respond to different sources of contamination. As this book will argue, any plausible explanation must acknowledge three partners which together produce this capacity: innate predispositions, experience (learning) and culture. Of these three inputs, the role of experience is the most difficult to isolate in experimental situations, and for this reason has been left out of scholarly discussion, but its contribution is no less significant.

EMBODIMENT AND LANGUAGE

A basic premise of this study is that embodied experience provides the foundation for cultural discourse. In the natural world, the emergence of verbal language among humans is an anomaly that is responsible, more than any other capacity, for their cognitive and technological superiority over other animals. Surprisingly enough, the basis for this system of seemingly unlimited potential is the arbitrary coupling of acoustic signs with ideas, conventional to every language.[22]

This valid insight served as the foundation of Ferdinand de Saussure's *Course on General Linguistics*, but in a distorted form that would have catastrophic ramifications for the humanities:

The linguistic fact can therefore be pictured in its totality – i.e. language – as a series of contiguous subdivisions marked off on both the indefinite plane of jumbled ideas (A) and the equally vague plane of sounds (B). The following diagram gives a rough idea of it:

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[20] *How Brains Make Up Their Minds* (New York: Columbia University Press, 2000), 20.
[21] Following Darwin and building on etymology, most disgust research has focused on taste (e.g., Rozin, Clark and McCauley, "Disgust," 637). For an account that emphasizes smell, see Aurel Kolnai, *On Disgust* (Chicago and La Salle, IL: Open Court, 2004 [1929]). See also Kazen, "Dirt and Disgust," 52–53; Curtis, *Don't Look*, 11–17.
[22] Eva Jablonka and Marion J. Lamb, *Evolution in Four Dimensions* (Cambridge, MA: MIT Press, 2005), 193–204.
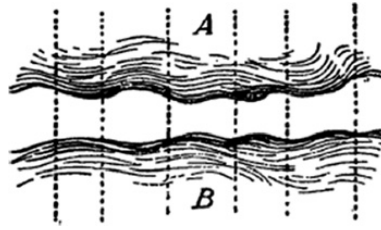
The characteristic role of language with respect to thought is not to create a material phonic means for expressing ideas but to serve as a link between thought and sound, under conditions that of necessity bring about the reciprocal delimitations of units. Thought, chaotic by nature, has to become ordered in the process of its decomposition.[23]

This scheme provided the foundations for the notion of linguistic relativity, as articulated by Benjamin Whorf: "We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds – and this means largely by the linguistic systems in our minds."[24] In other words, thought is dependent on arbitrary distinctions imposed by language. This implication is expressed clearly by de Saussure himself: "In the language itself, there are only differences ... the language includes neither ideas nor sounds existing prior to the linguistic system, but only conceptual and phonetic differences arising out of that system."[25] This overly simplistic scheme leads to many absurdities, especially when serving as the springboard for structuralist and poststructuralist cultural theories in which language is endowed with an unbounded power to construct social phenomena.[26]

Rather than viewing the linguistic system as autonomous, the alternative approach is to view language as inextricably connected with extralinguistic experience. One of the major contributions of cognitive linguistics has been to illuminate the relationship between human experience and semantic structure. This connection is commonly formulated in the

[23] *Course in General Linguistics*, trans. W. Baskin (London: Peter Owen, 1959), 112.
[24] Benjamin Lee Whorf, *Language, Thought and Reality*, ed. J. B. Carroll (Cambridge, MA: MIT Press, 1956), 213.
[25] Saussure, *Course*, 120.
[26] See Edward Slingerland, *What Science Offers the Humanities* (Cambridge University Press, Cambridge, 2008), 74–147.

assertion that word meaning is encyclopedic. William Croft summarizes this view as the recognition that "everything you know about the concept is part of its meaning."[27] In communication, the exchange of linguistic meanings by communicating parties is dependent on their shared world knowledge. In her book *Meaning and Experience*, Patrizia Violi offers a systematic program for relating lexical semantics to experience, claiming that "all language is intrinsically indexical, referring to the extralinguistic dimension of our experience."[28]

These observations provide a coherent framework for understanding the long-standing observation in the field of Semitic lexicography that the abstract uses of a term can often be traced back to an original concrete sense. Ludwig Koehler expresses this assumption in the preface to the Koehler–Baumgartner *Lexicon*:

> [I]t may be readily understood that the theological rendering of Hebrew words and phrases received the greatest amount of attention, and was given pride of place . . . But the theological, and also the more far reaching religious, world of ideas grew out of the non-theological, the common, world of ideas; whatever one wished to say theologically was expressed in language drawn from the common world of ideas.[29]

Embodied cognition offers an account which can explain the necessity for this process of scaffolding, whereby abstract (experientially distant) concepts emerge from concrete (experientially proximate) ones.[30] These principles find striking realization in the ancient Near Eastern terminology for "purity," as it relates to concrete experience.

AN ILLUSTRATION: THE SEMANTICS OF PURITY

Though the primary topic of the present study is pollution, it is necessary to take a quick look at its more attractive counterpart, purity.[31] An interesting point which pertains to ancient and modern languages alike

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[27] William Croft, "The Role of Domains in the Interpretation of Metaphors and Metonymies," in *Metaphor and Metonymy in Comparison and Contrast*, eds. R. Dirven and R. Pörings (Berlin: de Gruyter, 2003), 163.

[28] *Meaning and Experience*, trans. J. Carden (Bloomington, IN: Indiana University Press, 2001), 46.

[29] Ludwig Koehler and Walter Baumgartner, *Lexicon in Veteris Testament Libros* (Leiden: Brill, 1958), xiv.

[30] For further discussion, see the appendix at the end of this chapter.

[31] The following is a highly abbreviated summary of my article: "The Semantics of Purity in the Ancient Near East: Lexical Meaning as a Projection of Embodied Experience," *JANER* 14.1 (2014): 87–113.

is that the meaning of "purity" (and comparable terms) is distinct from "cleanness." For example, try to substitute "clean" for "pure" in expressions such as "pure-blooded Irishman" and "pure nonsense," and it is evident that the terms are not interchangeable. As a point of reference, the American Heritage Dictionary offers the following definitions for "pure":

1. Having a uniform composition; not mixed
2. Free of adulterants or impurities
3. Free of dirt, defilement or pollution
4. Complete; utter
5. Having no faults; perfect
6. Chaste; virgin[32]

This set of senses is remarkably similar to those represented in ancient Near Eastern languages, accentuating the question: What is purity and how did this cross-cultural concept originate?

In attempting to reconstruct the conceptual prehistory of "purity," it will be necessary to move beyond the standard structuralist definition of purity as the opposite of impurity. The latter approach (still influential in modern lexicographical works) is based on Ferdinand de Saussure's programmatic attempt to distinguish language as an object of analysis from extralinguistic experience. As noted above, de Saussure offered a mentalistic definition of the linguistic sign as a relation between a concept (e.g., dog) and an acoustic image (the sound /d-o-g/), leaving aside the dimension of reference (i.e., to an actual dog in a particular speech context). Second, and more importantly, he defined meaning as value, such that the sense of a term is *solely* determined by its relationship with the other terms in the linguistic system. Stated in his words: "The conceptual side of value is made up solely of relations and differences with respect to the other terms in language."[33] In this vein, one might be led, as was even the great lexicographer of Biblical Hebrew, James Barr, to define the meaning of Hebrew *ṭahor* as "(ritually) clean" as opposed to *ṭame'* "unclean."[34] As indicated above, such an understanding of "purity" is superficial and, in fact, imprecise. Without denying that these two terms can operate as antonyms (e.g., in Leviticus 11), it remains necessary to

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[32] The dictionary also includes: "of unmixed blood or ancestry" and "theoretical" (e.g., "pure science"), but these are clearly derivative of senses 1–2 and 4, respectively.

[33] Saussure, *Course*, 117.

[34] "Semantics and Biblical Theology – A Contribution to the Discussion," in *Congress Volume: Uppsala 1971*, VTSupp 22 (Leiden: Brill, 1972), 15.

take into consideration the distinct domains of embodied experience from which these terms originated. Whereas the root *ṭ-m-'* relates to contagion, the etymology of *ṭ-h-r* leads in a different direction entirely, as will be seen presently.

A survey of the lexical evidence from the ancient Near East leads to a striking and unambiguous conclusion. In diverse languages (Sumerian, Akkadian, Hittite, Ugaritic and Biblical Hebrew), the primary terms for purity used in ritual and cultic contexts refer to radiance, not cleanness. This observation is particularly striking in light of the fact that Hittite and Sumerian are not Semitic languages, and that even the terms in Akkadian are etymologically distinct from those in Ugaritic and Hebrew, showing that this phenomenon occurred in these languages independently. As an illustration, consider the use of the Hebrew term *ṭahor*, as it appears in the description of the divine throne in Exodus 24: "They saw the God of Israel and beneath his feet was like a brick-work of lapis lazuli and like the very heavens in its brilliance (*la-ṭohar*)." The Ugaritic cognates of this term (*ṭhr/ẓhr*) also link the brilliance of lapis lazuli to the sky and are employed exclusively in this concrete sense.[35] Similarly, terms such as Sumerian *kug,* Akkadian *ellu* and *ebbu* and Hittite *parkui* all share this general range of meanings, including the brightness, shininess and radiance of physical objects, including metals, precious stones and oil. These terms were applied to the cultic and ritual domains only secondarily. What is the reason for this ubiquitous semantic transition from radiance to purity?

The background for this transition is the fact that certain substances – especially metals like silver and gold – are most radiant in their pure and polished forms. Likewise, the golden hue of pure olive oil from a ripe fruit and the bright white appearance of processed wool provided salient images for understanding the notion of purity and could also be exploited in ritual acts. These cultures viewed radiant substances such as precious metals and stones as revealing an otherworldly or numinous character. For this reason, most of these terms could also be used to designate a state of holiness. For example, the Akkadian terms *ellu* and *ebbu*, like their Sumerian counterpart *kug*, were often ambiguous in their reference to purity or sanctity, designating an object or person ritually prepared for an encounter with the gods.[36]

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[35] See further James N. Ford, "The Ugaritic Letter RS 18.038 (KTU2 2.39) and the Meaning of the Term spr 'lapis lazuli' (= BH sappīr 'lapis lazuli')," *UF* 40 (2008): 302–304.

[36] See Chapter 12.

Even from this brief example, it can be seen that an ostensibly metaphysical concept such as purity can be traced back to its origins in a world of embodied meanings. These images provide the raw materials – the repertoire of signs – that serve as the basis for linguistic codes, which in turn provide the substance for cultural discourse and practice.[37] The invisible hand guiding this process of cultural cognitive development is the necessity to establish a collectively recognizable currency for the articulation of religious intuitions, based in its initial stages upon mutually perceptible concrete symbols. As Emile Durkheim aptly commented: "Logical thought is possible only when man has managed to go beyond the fleeting representations he owes to sense experience and in the end to construct a whole world of stable ideals, the common ground of intelligences."[38]

No less importantly, etymology often continues to guide usage,[39] as is illustrated by the following diagram (Figure 1.1) of the semantic transitions of Akkadian purity terms:
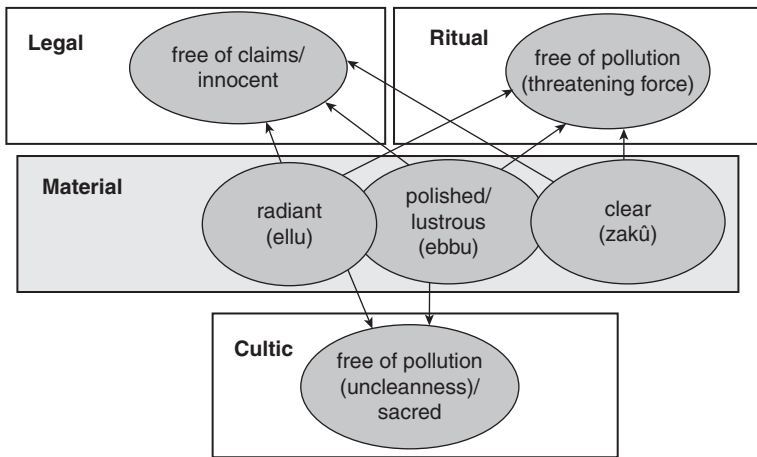

FIGURE 1.1 Akkadian purity terminology: Semantic relations

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[37] See Jordan Zlatev, "Embodiment, Language and Mimesis," in *Body, Language and Mind. Volume 1: Embodiment*, eds. T. Ziemke, J. Zlatev and R. M. Frank (Berlin: de Gruyter, 2007), 297–337.

[38] See E. Durkheim, *The Elementary Forms of Religious Life*, trans. K. E. Fields (New York: Free Press, 1995 [1912]), 437.

[39] Compare Barr's warning: "Etymology is not, and does not profess to be, a guide to the semantic value of words in their current usage, and such a value has to be determined from the current usage and not the derivation" (*The Semantics of Biblical Language* [London: Oxford University, 1961], 107). Without denying this point, a balanced perspective should acknowledge that the origins of words often continue to guide actual usage.

This diagram depicts the semantic development of Akkadian terms for purity. The rectangular frames represent experiential domains, both material and nonmaterial (legal, ritual and cultic). Here the "cultic" domain refers to sacrificial service of the gods to show them homage, as opposed to the "ritual" domain, which refers to therapeutic rituals that seek to eliminate metaphysical threats to an individual. The circles represent particular terms, which in the material domain correspond to experiential images pertaining to radiance (*ellu*), lustrousness (*ebbu*) or clarity (*zakû*).

Using this diagram, we see how the terminology for radiance in the material domain served as a resource for describing more abstract situations of being "pure" in the legal and cultic domains. It can be seen that only *ellu* and *ebbu*, whose concrete senses are "radiant" and "lustrous" (respectively), were employed also in the cultic sense of "sacred," whereas *zakû*, whose concrete sense was "clear" (i.e., free of adulterants), could refer to being "clear" of legal responsibility but did not serve as a productive image for cultic purity. The phenomena of radiance (*ellu*) and lustrousness (*ebbu*), perceived as manifestations of a numinous quality, were much more appropriate for cultic purity, which involves the possibility of interacting with the world of the gods. As can be seen, the concrete image on which each term is based continued to exert influence on its semantic trajectory.

BODIES OF EVIDENCE

Having discussed the broader theoretical point of departure of the present study, it is now necessary to define the set of data which will be subject to analysis. As noted, the study of pollution in ancient Israel requires a dual perspective, recognizing both universal and culture-specific aspects of this phenomenon. The focus of the study is the Hebrew Bible (HB), a heterogeneous collection of texts composed between 1000 and 300 BCE. This evidence will be contextualized by extensive use of ancient Near Eastern (ANE) documents, which exhibit a large degree of similarity in terminology and worldview. These should be dated roughly between 2000 and 500 BCE and represent an array of cultures and languages, including Sumerian, Akkadian, Hittite, Ugaritic and Aramaic. In addition, some discussions will engage ancient Greek literature from the mid-to-late first millennium BCE. In some cases, pollution discourse in ancient Israel will be traced into later (Jewish) sources, including the Dead Sea Scrolls from Qumran and rabbinic literature.

In parallel, recognition of the embodied foundations of pollution requires a consideration of the universal aspects of human psychology and

experience. Accordingly, this study makes selective use of ethnographic literature from contemporary (or near-contemporary) traditional cultures located in Africa, Asia, Melanesia and North America. It also incorporates psychological research, usually based on experiments with WEIRD participants, that is, from Western educated industrialized rich and democratic societies.[40] Taken together, the diversity of these data sets serves to reinforce the remarkable unity of the psychological phenomenon of contagion.

Further specification is required regarding the biblical texts since the distinction between various textual sources provides the basis for tracing developments and internal polemics within ancient Israel. Critical biblical scholarship has identified several distinct layers and sources from which the Torah (Pentateuch) is composed. The key source of information bearing on the present study is the Priestly source, a body of traditions which describes the divine origins of the cultic institutions and their laws in the wilderness of Sinai. Though these Priestly traditions manifest a largely homogenous style and ideology, they are not cut from a single cloth. In particular, it will be helpful to distinguish the Priestly traditions (P) that dominate the first part of the book of Leviticus (chapters 1–16) from the Holiness Legislation (H) that is found in chapters 17–27.[41] The present study will take as its point of departure the view of a growing consensus of scholars that H is later than P and constitutes the final redaction of the book of Leviticus. Likewise, it is recognized that several Priestly texts outside of Leviticus, including Exodus, Lev 1–16 and Numbers, exhibit a style and ideology similar to that found in Lev 17–27; hence they will be identified as H, though they may be later than the redaction of Leviticus.[42]

In terms of dating the Priestly traditions, the authors have been successful at thwarting the efforts of modern scholars to give them an absolute date, since they refer to an ideal wilderness situation that allows few if any historical anchors. Generally, a *longue durée* approach is warranted that recognizes that many of the ritual traditions may stretch back into the Late Bronze Age (fifteenth to twelfth centuries BCE), while also acknowledging that the final editing of these texts may have taken place in the Persian era (fifth century BCE), perhaps later. For the purposes of this

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[40] Joseph Heinrich, J., Steven J. Heine and Ara Norenzayan, "The Weirdest People in the World," *Behavioral and Brain Sciences* 33.2–3 (2010): 61–83.

[41] For a detailed discussion of the current state of research, see Julia Rhyder, *Centralizing the Cult*, FAT 134 (Tübingen: Mohr Siebeck, 2019), 25–64.

[42] See Christoph Nihan, "The Priestly Laws of Numbers, the Holiness Legislation, and the Pentateuch," in *Torah and the Book of Numbers*, FAT 2/62; eds. C. Frevel, T. Pola and A. Schart (Tübingen: Mohr Siebeck, 2013), 109–137.

study, it will be sufficient to recognize the *relative* lateness of certain Priestly texts, such as H and most found in the book of Numbers, which will enable crucial insights differentiating earlier and later stages of Priestly thought. In reconstructing the history of pollution, it will be crucial to compare these Priestly texts with other non-Priestly biblical texts. The latter sources often reveal notions that are at odds with the ideology of the Priestly texts, specifically in their final redaction (H). As such, they shed light on the latter's rhetorical tendencies and reveal implicit polemics within ancient Israel.

Finally, in light of these comments, a word regarding the potential ambiguity of the term "Priestly." In most cases, this term will refer to the Priestly traditions in general, to be contrasted with non-Priestly biblical texts. However, when distinguishing layers within this body of traditions, "Priestly" (usually through the abbreviation P) will be set in contrast with H. These cases should be obvious from the context.

ANCIENT TEXTS AND THE HISTORY OF HUMAN THOUGHT

To summarize this wide-ranging introduction, the study of pollution in the Hebrew Bible and in other cultures requires a framework that can disentangle the respective roles of experience and language in shaping pollution beliefs. Such a framework, building on the insights of embodied cognition, can help account for both universal and culturally contingent aspects of pollution.

To confront these challenges, we will need to track the evolution of pollution in ancient Israel as a dynamic concept. Considering the numerous methodological pitfalls described above, this goal can be achieved only by carefully following the trajectory of pollution from an embodied concept, rooted in universal human psychology, to its culturally specific, flexible permutations in biblical and post-biblical discourse. More specifically, I will advance a three-tiered approach, isolating the following discrete levels or stages in the analysis of pollution: **images** – recurrently meaningful bodily experiences (not necessarily visual) and gestures;[43]

[43] This usage is largely compatible with Michael Kimmel's characterization of "image schemas." It is important to keep in mind that the pollution schema is primarily a pattern of active response, not a mental representation. See M. Kimmel, "Culture Regained: Situated and Compound Image Schemas," in *From Perception to Meaning: Image Schemas in Cognitive Linguistics*, ed. B. Hampe (Berlin: de Gruyter, 2005), 285–312; and "Properties of Cultural Embodiment: Lessons from the Anthropology of

codes – incorporating these images, and making up a culture's conventional linguistic and behavioral repertoires; and **discourse** – the entirety of a culture's verbal and nonverbal capacity for interaction, which incorporates these codes in both traditional and novel ways.[44]

  Until now, the possibility of such a synthetic account has been encumbered by disciplinary tensions between evolutionary psychology and its emphasis on innate affective mechanisms and other disciplines (especially anthropology and the humanities) which tend to place greater emphasis on the role of cultural construction. This tension took on explosive proportions in the sociobiology debate of the 1970s in the wake of Edward O. Wilson's book *Sociobiology: The New Synthesis,* whose final chapter argued that human psychology and behavior should be understood within a common evolutionary framework together with that of other animals.[45] This potentially hegemonic view of biology over the humanities aroused fierce opposition from both scientists and humanists.[46] The integrative approach of the present work seeks to overcome the unhelpful dichotomy of biological and cultural approaches to human behavior. As a unified account which incorporates both biological and cultural factors, this analysis offers a test case of "consilience" – the potential offered through a synthesis of naturalistic and humanistic cultural investigation.[47] Not only will it aim to show how life sciences, anthropology and psychology can contribute to the study of ancient texts, it will also argue that these ancient documents can fill in crucial gaps for reconstructing the cognitive development of human civilizations.

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the Body," in *Body, Language and Mind. Volume 2: Sociocultural Situatedness*, ed. T. Ziemke, J. Zlatev and R. M. Frank (Berlin: de Gruyter, 2008), 77–108.

[44] It is tempting to compare the latter two tiers to de Saussure's well-known distinction between *langue* (the linguistic system) and *parole* (instantiated speech), which corresponds respectively to the distinction between semantics and pragmatics. At the same time, as pointed out by linguists and philosophers of language alike, one must not press these theoretical distinctions too far. See further Ronald W. Langacker, *Cognitive Linguistics: A Basic Introduction* (New York: Oxford University Press, 2008), 40–42; Ruth Garrett Millikan, *Beyond Concepts* (Oxford: Oxford University Press, 2017), 167–183.

[45] *Sociobiology: The New Synthesis* (Cambridge, MA: Belknap Press, 2000 [1975]), 547–576.

[46] Ullica Segerstråle, *Defenders of the Truth: The Sociobiology Debate* (Oxford: Oxford University Press); Kevin N. Laland and Gillian R. Brown, *Sense and Nonsense: Evolutionary Perspectives on Human Behaviour* (New York: Oxford University Press, 2011). We will return to this topic in Chapter 13.

[47] Edward O. Wilson, *Consilience: The Unity of Knowledge* (New York: Alfred Knopf, 1998); Edward Slingerland, *What Science Offers the Humanities* (Cambridge: Cambridge University Press, 2008); Edward Slingerland and Mark Collard (eds.), *Creating Consilience: Integrating the Sciences and the Humanities* (Oxford: Oxford University Press, 2012). Some scholars use the designation "vertical integration."

It is now time to embark on this archaeology of the mind. In carrying out this excavation, there is no choice but to get our hands dirty.

APPENDIX: WHAT IS EMBODIED COGNITION?

Embodied cognition, like many things, is easiest to define by what it is not. It is a rejection of an extreme dualism that views human cognition as a mind that can operate entirely independently from a body, like a computer that manipulates symbols without any need for direct sensory-motor experience of the things that these symbols represent.[48] One need not deny that minds can manipulate abstract concepts: they can solve mathematic equations, play chess and perform a whole host of other tasks which seem to take place in a disembodied virtual reality. Regarding such capacities, embodied cognition makes two reservations. First, such abstract manipulations constitute a small fraction of the intellectual activities in which humans engage on a daily basis. Second, and more importantly, these abstract capacities are based on experientially grounded concepts.

The following discussion will highlight two key premises of embodied cognition as they apply to the present study:

Premise 1: Cognition Is Inextricably Tied to the Needs of the Organism in Adapting Itself to Its Environment

Embodied cognition argues that the unique cognitive capacities of humans are outgrowths of the biological needs and resources that govern the evolution of cognition in other creatures.[49] Its point of departure is the evolutionary assumption that humans for all of their uniqueness share a common biological – and neurological – origin with "lower" mammals. This shared origin is evident, inter alia, by the shared structure of mammalian brains, with the unique abilities of humans predicated on the latest phase of neuro-anatomical development, fittingly named the "neocortex."[50] An important implication of this approach is that the

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[48] See John Searle, "Can Computers Think?" in *Philosophy of Mind: Classical and Contemporary Readings*, ed. D. J. Chalmers (New York: Oxford University Press, 2002), 669–675.

[49] Louise Barrett, "The Evolution of Cognition: A 4E Perspective," in *The Oxford Handbook of 4E Cognition*, eds. A. Newen, L. de Bruin and S. Gallagher (Oxford: Oxford University Press, 2018), 719–734.

[50] See, e.g., Mark F. Bear, Barry W. Connors and Michael A. Paradiso, *Neuroscience: Exploring the Brain* (Philadelphia, PA: Lippincott Williams & Wilkins, 2007), 167–200.

most basic levels of embodiment – which serve as the foundation for linguistically formulated concepts such as pollution – can be found in the nonverbal experience of other animals. It also enables us to recognize that minds coevolved with bodies, not for the purpose of playing chess or other abstract computations as ends unto themselves, but for the adaptive control of action within the organism's natural environment.[51]

This perspective will enable us to see the fallacy, common to much psychological research, of drawing a sharp distinction between emotions and judgment. Giovanni Colombetti dissolves this distinction as part of her "enactivist" view of mind, arguing that "cognition is both 'embodied' (realized, enacted, or 'brought forth' not just by the brain but by the whole organism) and 'embedded' (realized by the organism in interaction with the environment)." This perspective enables a reassessment of the role of affect (emotions, moods, etc.) in cognition:[52]

What is distinctive about enactivism is that it provides a theory of biological organization and of its relation to the mind that entails that not just emotions, moods, motivational states, etc., are affective, but that *cognition* is too. More precisely, as we are about to see, enactivism claims that the hallmark of cognition is "sense-making," and a close look at this notion reveals that sense-making is simultaneously a cognitive and an affective phenomenon.[53]

To apply this theoretical point, imagine the feeling of an unidentified creature slowly crawling up your arm. Is your response determined by the identification "this is an insect," or is the feeling itself also key to shaping your reaction? Recognizing that our affective predispositions are an important part of our ability to make sense of our environment offers a holistic and more plausible account of the role of affect in shaping one's judgments. Accordingly, linguistically defined concepts are grounded in experience in the deepest sense, deriving their significance from the types of drives and emotions that facilitate the organism's attunement to its environment. This evolutionary approach suggests a simple and intuitive understanding of embodiment as referring to the holistic synthesis of mind and body in the service of realizing the organism's needs.

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[51] Gün R. Semin and Eliot R. Smith, "Introducing Embodied Grounding," in *Embodied Grounding: Social, Cognitive, Affective and Neuroscientific Approaches*, eds. G. R. Semin and E. R. Smith (Cambridge: Cambridge University Press, 2009), 1.

[52] "Enacting Affectivity," in *The Oxford Handbook of 4E Cognition*, eds. A. Newen, L. de Bruin and S. Gallagher (Oxford: Oxford University Press, 2018), 571–572.

[53] Ibid., 574.

Premise 2: Symbolic Modes of Communication
Are Grounded in Experience

As noted above, influential approaches to semantics, based on structural-ist principles, have tended to divorce the linguistic system from experience. In contrast, an embodied approach to language views its "digital" (conventional) aspects as grounded in "analog" images, grounded in embodied experience.

A compelling framework showing how to incorporate these two dimensions is Daniel Dor's monograph *The Instruction of Experience,* which outlines a comprehensive linguistic theory based on the recognition of the interaction between individualized experience and the semantic system ("the symbolic landscape"). In this account, the organization of the semantic system is in part autonomous, yet it remains inextricably tied to the world of experience to which it refers.[54] This relation is depicted as follows:[55]

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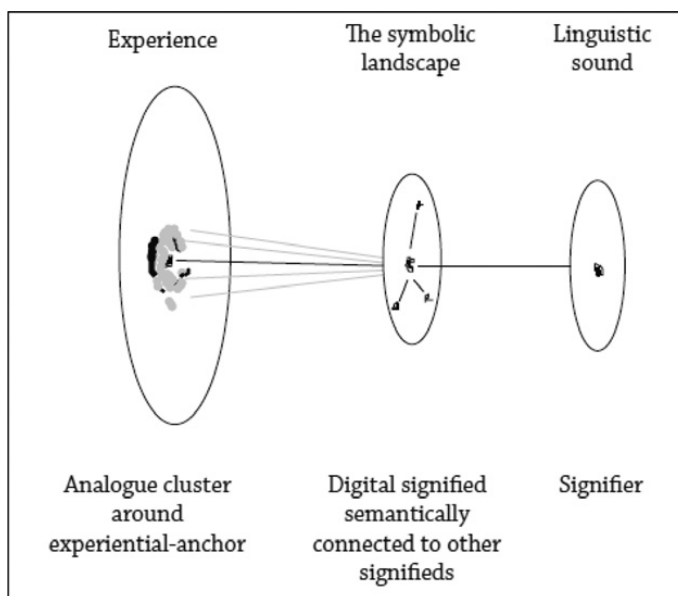
[54] Daniel Dor, *The Instruction of Imagination: Language as a Social Communication Technology* (Oxford: Oxford University Press, 2015), 34–59.
[55] Ibid., 45 (Figure 3.1), used with permission.

In his example, the signifier "chair" (acoustically /tʃɛər/) interacts with related terms in the semantic landscape (such as "stool," "armchair," "upholstery," "legs," "table," "furniture," "comfortable," "sit") as well as the individual's personal experience involving chairs.

Dor's account of how this semantic knowledge is acquired by the language learner is highly relevant for the present discussion:

As our experiences accumulate in our embodied minds (leaving their traces in our nervous system), we detect similarities and analogies between them, and construct generalizations – experiential generalizations, always analogue, holistic, fuzzy, and context-dependent – which then color, shape, and sometimes determine the way we further experience. This is how we learn. This does not deny the possibility that our nervous systems might be innately biased, in different ways, toward certain ways of experiencing and accumulating experiences ... What it does deny, and very strongly so, is the idea that our general cognition can be described – let alone explained – in terms of the manipulation of abstract symbols.[56]

This account is highly compatible with the "Perceptual Symbol Theory" outlined by Lawrence Barsalou, which seeks to reconcile digital and analog aspects of language. According to his model, perceptual images are stored in memory and can be activated in the form of "simulations" by linguistic cues.[57] A related body of research argues that the processing of action verbs activates the motoric regions of the brain, not only those traditionally associated with general language processing. For example, brain imaging studies seem to indicate that an action word involving the legs (e.g., "kick") activates the corresponding region in the motor cortex, distinguishable from the region corresponding to the hands.[58] Similar insights have been applied to the processing of metaphors. Brain imaging

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[56] Ibid., 18–19. For a detailed account for how the world structures language around experiential anchors (called "unicepts"), see Millikan, *Beyond Concepts*.

[57] Lawrence Barsalou, "Perceptual Symbol Systems," *Behavior and Brain Sciences* 22 (1999): 577–660 (with responses); Lawrence Barsalou, "Grounding Symbolic Operations in the Brain's Modal Systems," in *Embodied Grounding: Social, Cognitive, Affective and Neuroscientific Approaches*, eds. G. R. Semin and E. R. Smith (Cambridge: Cambridge University Press, 2009), 9–42; and his excellent survey of related research: "Grounded Cognition," *Annual Review of Psychology* 59 (2008): 617–645. See also: Andrew J. Bauer and Marcel A. Just, "Neural Representations of Concept Knowledge," in *Oxford Handbook of Neurolinguistics*, eds. G. I. de Zubicaray and N. O. Schiller (Oxford: Oxford University Press, 2019), 518–547.

[58] Friedemann Pulvermüller, "Brain Embodiment of Category-Specific Semantic Memory Circuits," in *Embodied Grounding: Social, Cognitive, Affective and Neuroscientific Approaches*, eds. G. R. Semin and E. R. Smith (Cambridge: Cambridge University Press, 2009), 71–97.

and other experimental techniques have demonstrated that the processing of metaphoric language may activate loci of the brain pertinent to the source domain of the metaphor.[59]

Alongside these expanding fields of experimental research, another important body of evidence substantiating the primacy of experience can be found in ancient languages. This aspect is often overlooked by cognitive scientists who lack familiarity with ancient languages and their dependency on concrete imagery. Nevertheless, the role of experience in shaping the linguistic repertoire has not been entirely ignored. Anticipating evolutionary theory and psychological research of recent decades, the eighteenth-century Scottish philosopher Thomas Reid derived this point logically, based on his distinction between "artificial" and "natural" languages: "An artificial sign has no meaning except what is attached to it by contract or agreement among those who use it; a natural sign is one which (independently of any contract or agreement) has a meaning that every man understands through the drives in his nature." On this basis, he proposed a scaffolding process by which artificial language emerged from natural language:

Having premised these definitions, I think it is demonstrable, that if mankind had not a natural language, they could never have invented an artificial one by their reason and ingenuity. For all artificial language supposes some compact or agreement to affix a certain meaning to certain signs; therefore there must be compacts or agreements before the use of artificial signs; but there can be no compact or agreement without signs, nor without language; and therefore there must be a natural language before any artificial language can be invented.[60]

The basis of communication is first and foremost reference – a focus of shared attention.[61] To a large extent, this principle informs both the acquisition of language by infants and the development of language on

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[59] Raymond W. Gibbs, Jr., *Embodiment and Cognitive Science* (Cambridge: Cambridge University Press, 2006), 158–207; George Lakoff, "The Neural Theory of Metaphor," in *The Cambridge Handbook of Metaphor and Thought*, ed. R. Gibbs Cambridge: Cambridge University Press, 2009), 17–38. For a meta-analysis of relevant studies, see Alexander Michael Rapp, "Comprehension of Metaphors and Idioms: An Updated Meta-Analysis of Functional Magnetic Resonance Imaging Studies," in *Oxford Handbook of Neurolinguistics*, eds. G. I. de Zubicaray and N. O. Schiller (Oxford: Oxford University Press, 2019), 710–735.
[60] T. Reid and D. R. Brookes, *Thomas Reid, an Inquiry into the Human Mind on the Principles of Common Mind* (Edinburgh: Edinburgh University Press, 1997), p. 51.
[61] Terrance W. Deacon, *The Symbolic Species: The Co-Evolution of Language and the Brain* (New York: W. W. Norton, 1997), 47–101.

the scale of societies. Indeed, Michael Tomasello, building on his extensive research in primatology and developmental psychology, argues that

the first forms of uniquely human cooperative communication were the natural gestures of pointing and pantomiming used to inform others helpfully of situations relevant to them. Pointing and pantomiming are human universals that even people who share no conventional language can use to communicate effectively in contexts with at least some common ground.[62]

Only once such correlations between acoustic signs and experience are established is it possible to employ the repertoire of signs independently of experience, making it possible to refer to past, future, hypothetical and even impossible situations.

A useful analogy can be taken from the emergence of human writing systems, including Egyptian hieroglyphics, Mesopotamian cuneiform and even the alphabet. The visual signs on which all of these systems are based originated as iconic symbols (pictures), which were only secondarily appropriated to "represent" sounds (syllables and phonemes) by virtue of convention.[63]

In sum, the various forms of human communication, including bodily gestures and linguistic signs (visual and acoustic), originated by means of an intersubjective moment which enables the establishment of consensus, an agreement that a given sign is to be correlated with a particular communicative function. Once this has been established, it becomes available for a diverse array of additional communicative functions, limited only by the associative capacities of the communicating partners.

Overall, the account of pollution in this book can be viewed as an extended application of these principles of embodied cognition, showing that:

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[62] *A Natural History of Human Thinking* (Cambridge, MA: Harvard University Press, 2014), 32–79 (49–50), building on his systematic argumentation in *The Origins of Human Communication* (Cambridge, MA: MIT Press, 2008). There he argued, "If we want to understand human communication, therefore, we cannot begin with language. Rather, we must begin with unconventionalized, uncoded communication, and other forms of mental attunement, as foundational" (59).

[63] For the origin and development of the cuneiform system, see Jerrold S. Cooper, "Sumerian and Akkadian," in *The World's Writing Systems*, eds. P. T. Daniels and W. Bright (New York: Oxford University, 1996), 37–57; Piotr Michalowski, "Origin," in *The World's Writing Systems*, eds. P. T. Daniels and W. Bright (New York: Oxford University, 1996), 33–36; J.-M. Durand, "Cuneiform Script," in *A History of Writing*, ed. A.-M. Christin (Paris: Flammarion, 2002), 20–32.

1. The discourse on pollution is rooted in concerns that are thoroughly embodied, pertaining to affective processes of sense-making that enable the organism to survive and thrive in its environment;
2. This embodied repertoire of meanings provided the raw materials for extending this imagery into the socio-moral domain.

In the following analysis of textual materials which deal with aspects of the life cycle as represented in the biblical sources, the first principle will be most evident in the sections that deal with disease, diet and death. The second principle will rise to the fore in the discussions of sexuality and holiness.