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A Cognitive History of Divination
in Ancient Greece

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For many millennia and across the whole Old World, from Eastern to Western Eurasia, and from the tip of southern Africa to the highlands of Britannia, people were in the habit of practicing divination, or the art of translating information from their gods into the realm of human knowledge. On a scale whose breadth we have yet to fully appreciate, they assumed clandestine signs were continuously being revealed through the natural world and its creatures (including their own bodies, asleep or awake). They received messages from temple-based oracles, as well as in their dreams, from the entrails of the animals they killed, from lightning, fire, lots, pebbles, livers, fired tortoise shells, the stars, birds, the wind, and nearly anything else that moved.¹ These practices were not, for the most part, considered esoteric or marginal. The inclinations of the divine, like the weather, were simply a part of the ancient atmosphere, and just about wherever we look in the sources, we find people trying to gauge the prevailing winds. Scholars have yet to take account of the extraordinary diffusion of the phenomenon. It belongs to a small group of rather widely shared cultural forms from antiquity, alongside things like myth or sacrifice. While surely there is no easy, global answer as to why this is the case, better local

¹ And even some things that don't, including cheese. Artemidorus 2.69, cited in Sarah Iles Johnston, *Ancient Greek Divination* (Malden, Mass.: Wiley-Blackwell, 2008), 8.

answers will emerge from a fuller reckoning with this fact of near universal diffusion.

DIVINATION, MAGIC, AND POLITICS

When it has been studied by classicists, divination tends to appear in one of two scholarly venues: either as an important component of social and political history—which it clearly was—or as a subset of the study of magic, a field that has been burgeoning in recent decades. Taking social history first, several important advances have been made. Informed by anthropological studies, and ultimately by Evans-Pritchard, classicists have looked at divination as a means to invoke the ultimate authority of the divine to construct and maintain social orders by building consensus and managing conflict.² This approach grows pretty naturally from the kind of evidence most often cited in scholarly studies—that is, the captivating tales of divinatory practice recorded by historians and poets, including such famous stories as those of Oedipus, Croesus, or the Athenians' Wooden Wall. These typically unfold according to the literary logic of the puzzle or riddle, and show people trying to grope through life on incomplete and partial information, always in contrast to a divine fullness of knowledge. We see elite figures fastening onto this or that sign and enlisting the gods' voices in the service of their own ends. Such famous cases invite us into high-stakes public venues, where leaders in politics or war struggle with what something ominous portends for them. One can surely see why, by focusing here, some scholars have developed the view that divination was mainly about politics.

Attractive as it obviously is, and as useful as it has been in clarifying political and social history, this approach has limitations. Briefly put, it moves all too quickly away from the divinatory moment itself, classifying

² For a lucid recent overview, see Michael Flower, *The Seer in Ancient Greece* (Berkeley: University of California Press, 2008), 72–80. For a standard of scholarship, see H. W. Parke and D. E. W. Wormell, *The Delphic Oracle* (Oxford: Oxford University Press, 1956), and the reworking of this tradition by Joseph E. Fontenrose, *The Delphic Oracle: Its Responses and Operations* (Berkeley: University of California Press, 1978); cf. Robert Parker, "Greek States and Greek Oracles," in *Crux: Essays in Greek History Presented to G. E. M. de Ste. Croix*, ed. P. A. Cartledge and F. D. Harvey (London: Duckworth, 1985), 298–326; E. E. Evans-Pritchard, *Witchcraft, Magic, and Oracles among the Azande* (Oxford: Clarendon Press, 1937); J. C. Mitchell, *The Yao Village* (Manchester: Manchester University Press, 1956), 165–75; and George K. Park, "Divination and Its Social Contexts," *Journal of the Royal Anthropological Institute* 93, no. 2 (1963): 195–209.

it as a pretext for the real work divination does, according to this view, working through a social problem in a political forum. But we might be left wondering why (on earth) the ancients would have chosen these peculiar methods of doing politics. Current scholarly studies of this variety will sometimes suggest a rather simple vision of an enlightened few manipulating the masses with ostentatious mystery. But such claims rarely take into account that the elites, just as much as the larger public, typically thought divination actually worked. And further, if divination were really mostly about politics, why would such techniques have been considered equally useful in private matters and even in questions of intimate and personal concern? When seen as a pretext, the divinatory sign, as a medium with all its peculiar characteristics and qualities, is passed over. It becomes a cipher, isolated and irrational, to be bracketed and filled with other more comprehensible, that is, social-historical, content.

The second significant body of scholarship begins from entirely different premises. It treats divination as though it were part of the underworld of occult practices that thrived in the classical period. The prevalence of the pairing “magic and divination”—to be found in countless titles of books, chapters, articles, and conferences, and enshrined in the title of Evans-Pritchard’s seminal work of anthropology, *Witchcraft, Oracles and Magic Among the Azande* (1937)—suggests that the two are twinned in the contemporary imagination.³ But, from the perspective of the classical evidence, this view also has its limitations. While magic and divination may seem to us to be complementary, and while they may have been so for Evans-Pritchard’s *Azande*, that is not the Greek and Roman view, and in the classical context we lose something in our understanding of both by lumping them together. Briefly, while magic (*γοητεία, μαγεία*) was thought of as a fringe, esoteric, occult activity, divination (*μαντεία*) was certainly not. Magic was nearly always malicious and deeply socially stigmatized. It was not something done in polite company. The magician’s global reputation as a secretive and nefarious miscreant is not matched by that of the diviner—even though he or she can make enemies, as the Pythia does of Croesus or Teiresias of Oedipus. It is the *γότης* and not the *μάντις* that becomes simply synonymous with a cheat. Greeks and Romans reserved multiple, prestigious offices for their diviners; no parallel exists for magicians. The few stereotypes, orbited by class distinctions, of unscrupulous or charlatan

³ A modern *locus classicus* for the field is W. R. Halliday, *Greek Divination: A Study of Its Methods and Principles* (London: Macmillan, 1913).

diviners, particularly itinerant ones,⁴ find their closest analogues not in treatments of magicians, but in ancient views of technical experts of all kinds, like medical doctors or rhetoricians, whose specialist's knowledge is sometimes an irritant.

It is true that many spells in the *Greek Magical Papyri* offer expertise in the divinatory arts, but then again, the writers of these spells claim expertise in all kinds of things.⁵ They offer results in the fields of rhetoric, athletics, the making of pottery, medicine, or nearly any other highly skilled craft for which people were accustomed to hiring expert help. That magicians claim skills as diviners does not mean divination has particularly to do with magic any more than it means medicine does. It is better to say that the two fields have some relationship, but not a bidirectional one. The most famous diviners and oracles—Teiresias, the Pythia, the priestesses of Dodona, and the Sibyl, for example—have no reputation as magicians. It is probably more accurate to position the evidence this way: while some magicians make rather indiscriminate claims about the range of their areas of expertise, the practitioners of the other specialties tend to be more circumspect. We find an occasional Gorgias and his equivalent in the parallel arts, who will claim powers to bewitch and beguile, usually to be purposefully provocative, but the claim of affiliation is usually one-sided.⁶ For the most part, divination is understood as one of the useful arts—a speculative one, to be sure, but not an occult one. The awkwardness of the pairing, magic and divination, can be highlighted by a comparison with sacrifice. One would not get far in classical scholarship arguing for a pairing of magic and sacrifice. Even though it may strike us as mysterious behavior, we have known for many centuries that sacrifice was a core part of civic religious life, and its rationale cannot be attributed to superstition. That magicians give copious examples and instructions regarding sacrifice makes the pairing no less awkward.

The scholarly approach to divination that treats it as a subset of the study of magic seems to share little with the social-historical one. However, both proceed from an irrationalist premise, a simple though consequential similarity. They participate in an area of classical scholarship that, since

⁴ See John Dillery, “*Chresmologues and Manteis: Independent Diviners and the Problem of Authority*,” in *Mantikê: Studies in Ancient Divination*, ed. Sarah Iles Johnston and Peter T. Struck (Leiden: Brill, 2005), 167–231.

⁵ For the most thorough recent treatment of divination in the magical texts, see Johnston, *Ancient Greek Divination*, 21–27, 144–79.

⁶ Gorgias, *Encomium of Helen*, speaks of the power of words to bewitch and beguile like a magical charm (Diels Kranz, B11.8, B11.10).

Dodds, has received corrective attention under the umbrella of recovering the “irrational” aspects of Greek and Roman life, on which more in a moment; and this context means that both begin with the idea that divination is a form of human behavior that does not, properly speaking, make sense. The question of the logic that might lie behind it is either not asked, since it is assumed not to have one, or is deflected onto other, functionalist grounds. In place of a rational logic, the social historian explores the more comprehensible realm of social capital, while the historian of magic will tend toward the psychological, presenting an ancient mindset, desperate to find effective means of dealing with a sometimes brutal world. These intellectual histories place divination into a group of oddities of a past time that emerge from exotic theological commitments, unearthed with a kind of curatorial spirit.

In my view, the current study of divination has been overly functionalized. This has left us with atrophied answers to a tantalizing question: why did it make sense to most Greeks (and Romans, and almost everyone else in the Old World) to think that their gods were sending them messages through the natural world and its creatures, including their own bodies, asleep or awake? Answers in the current scholarship are not very robust. They move quickly into unsatisfying generalities like superstition or a desire for social manipulation. These are, after all, rather broad impulses, and while they are surely relevant to divination, they don’t lead to it very directly. It’s not as though with sufficient amounts of superstition and manipulative intent, the idea that the universe is percolating with hidden messages will just emerge. In my view, the question of *why* has been positioned too narrowly, doubtless partially as a result of the kinds of source texts that have been the focus of study. Immersed in the tales told by historians or poets, case studies of divinatory situations both real and imagined, a scholar finds local answers, tactical purposes, specific goals, and targeted outcomes. Croesus sent to Delphi to ask if he should attack the Persians because he wanted to know if he would win.

The classical evidence offers another kind of answer. It emerges from a set of texts that are less well studied than the literary and historical ones. From back to at least Democritus’s time, we find a tradition of philosophical reflection on divination. While these thinkers often treat divination as poised on the edge of comprehension, they do not generally assume that it has fallen into the abyss. Only a few of our sources are entirely hardheaded on the subject, like the testimony of Epicurus⁷ and Cicero’s own persona in

⁷ See Cicero *De div.* 1.3; 2.40.

book 2 of the *De divinatione*. These voices, which have been unduly amplified, are eddies in the main stream. The outsized influence of Cicero's text, which his academic background leads him to structure as a for-and-against proposition, has led us to overemphasize the controversial dimension of the topic and to overlook the earnestness with which nearly all of our sources pursue it. Most ancient intellectuals, in short, take divination more or less seriously. The contrast with magic is again instructive: theories of magic are very rare and sketchy.⁸ The evidence base is orders of magnitude more slight than in the case of divination theory.⁹

Rather than reckoning with the meaning of one particular sign or other, these thinkers explore the premises of the whole enterprise. They study the structure of this language of signs, not its vocabulary. Their works provide a remarkably rich vein of thinking on the subject, which has hardly been explored beyond specialized studies of individual texts. They vary in their emphases. Plato and Aristotle devote most of their attention to prescient dreams. The Stoics and Neoplatonists open up the consideration to all kinds of divinatory activity. While one can find some interest in linking the phenomenon to gullibility, manipulation, or superstition, each of these schools also forwards much more thinking about it. They differ greatly in the details, but they all start with what they see as a curious phenomenon, one that seems to them to be both hard to understand and a more or less observable fact. Certain people are just good at arriving at useful knowledge, in crux situations, in ways difficult to understand. After making allowance for the speculative nature of the topic, they ask something like: How in the world *do* they do that? The traditional Homeric view—that an anthropomorphic Olympian intervenes in an act of purposeful communication, placing a kind of person-to-person call—is never embraced. Instead, we find a long list of singularly powerful minds meditating on what for them is an undeniable sense that we humans sometimes acquire knowledge—on matters past, present, and future—in deeply enigmatic ways. These thinkers' examination of the question suggests that another, parallel history of divination is also possible to tell, one that sees it less as a social or occult phenomenon, and more as belonging to the history of a certain kind of cognition.

⁸ The most thorough study is Fritz Graf, "Theories of Magic in Antiquity," in *Magic and Ritual in the Ancient World*, ed. Paul Mirecki and Marvin Meyer (Leiden: Brill, 2002), 93–104.

⁹ Sarah Iles Johnston calls divination a "tertium quid," which, even after Dodds, scholars have rarely pursued. (Johnston, "Introduction," in Johnston and Struck, *Mantikê*; and in more depth in Johnston, *Ancient Greek Divination*, 21–30.)

RATIONALITY AND COGNITION

For many years the category of rationality governed modern accounts of the distinctive place of the Greeks in intellectual history. With a few exceptions around the school of Cambridge Ritualists, scholars understood the Greeks as standing for a stage in which humanity had emerged into a new kind of critical self-awareness, one that, as the story goes, had eluded their predecessors.¹⁰ A half-century ago, E. R. Dodds powerfully nuanced the dominant narrative with his Sather Lectures of 1949–50, published as *The Greeks and the Irrational*. Dodds showed that Greeks were instead engaged in a range of practices and beliefs that would seem, to us at least, to be decidedly *irrational*. Dodds's landmark study initiated whole fields of inquiry and left us a more balanced picture of classical intellectual culture, but it also, in an infelicitous side effect, reinforced the sense that rationality (or its negated form) is the coin of the realm.

Following in this tradition, the most important contributions to the study of divination's place within intellectual history, a study which has never quite achieved critical mass, tend to place the question of rationality/irrationality at the center. A useful but mostly documentary section of Auguste Bouché-Leclercq's four volumes on the *Histoire de la divination dans l'antiquité* (published between 1879 and 1882) deals broadly with divination in its ancient intellectual contexts, and a not well-known dissertation, by Friedrich Jaeger from Rostock University, on *De oraculis quid veteres philosophi judicaverint* (1910) returned to the idea. W. R. Halliday published his *Greek Divination* three years later, embracing, in the wake of the Cambridge Ritualists, a possibility for an irrational, "pre-Olympian" realm of Greek life.¹¹ Arthur Stanley Pease showed the remarkable depth of Cicero's *De divinatione* in his monumental edition (1920–23), which included copious commentary on the philosophical tradition, almost always from the standpoint of source criticism. Since then the topic mostly languished until Dodds's watershed book, where divination appeared as one species of the irrational. A quarter century after Dodds, Jean-Pierre Vernant and his collaborators made important advances in his collection *Divination et rationalité* (1974). These observations were pursued by Detienne within the realm of structuralist anthropology.¹² Valuable studies,

¹⁰ Johnston, *Ancient Greek Divination*, 18–19.

¹¹ See discussion in Johnston, *ibid.*

¹² Marcel Detienne, *Masters of Truth in Archaic Greece* (New York: Zone Books, 1996), originally published as *Les Maîtres de vérité dans la grèce archaïque* (Paris, 1967).

especially of the Stoics, appeared in the history of science by R. J. Hankinson.¹³ Friedrich Pfeffer examined the wider topic in his *Studien zur Mantik in der Philosophie der Antike* (1976), a study from which I have profited. A revival of interest in ancient semiotics has made promising inroads, in the work of Giovanni Manetti, Ineke Sluiter, and Walter Leszl.¹⁴ More recently, Sarah Johnston has set out a clear overview of the whole.¹⁵ Collectively, the main contribution of this area of scholarship has been to work through the powerful observation that rationality has a history, and to show the gains we realize by a deeper understanding of cultures whose notions of rationality are not always isomorphic to our own.¹⁶

By letting the category of rationality and its negative twin set the terms for the discussion, we have missed out on subtleties in the ways Greeks thought about the topic—and, more important, how they thought about thinking in general. The binary of rationality/irrationality is too blunt. It places discursive, inferential, volitional, self-conscious intellectual activity on the one side and absurdity on the other. But according to the general view among the philosophers, while divinatory knowledge arrives via processes that are not quite rational, neither are they irrational, in the sense of being unreasonable, illogical, or absurd. I have come to the view that trying to measure the rationality of divinatory thinking is a stumbling block and not a pathway to understanding it. The contemporary category of cognition (as used in its broadest sense within the cognitive sciences) allows us to describe such intellectual phenomena better precisely because it allows for a study of thinking that is agnostic on the question of rationality. Cognition, as I will be using it, encompasses all activities of the mind and allows them an equal share of attention.

SURPLUS KNOWLEDGE

Starting from these preliminaries, what follows proceeds via a central axiom that should be relatively uncontroversial and just as true in antiquity

¹³ R. J. Hankinson, "Stoicism, Science, and Divination," *Apeiron* 21, no. 2 (1988): 123–60.

¹⁴ Giovanni Manetti, *Theories of the Sign in Classical Antiquity* (Bloomington: Indiana University Press, 1993); Ineke Sluiter, "The Greek Tradition," in *The Emergence of Semantics in Four Linguistic Traditions: Hebrew, Sanskrit, Greek, Arabic*, ed. Wout Jac. van Bakkum et al. (Amsterdam/Philadelphia: John Benjamins Publishing Company, 1997); Walter Leszl, "I messaggi degli dei e I segni della natura," in *Knowledge through Signs: Ancient Semiotic Theories and Practice*, ed. Giovanni Manetti (Turnhout: Brepols, 1996), 43–85.

¹⁵ Johnston, *Greek Divination*, 4–27.

¹⁶ This is an ongoing theme in Johnston and Struck, *Mantikê*.

as it is now: *Our ability to know exceeds our capacity to understand that ability.* This means that our cognitive selves are to some (let us say, for now, irreducible) degree mysterious to us. After bracketing entirely the claims of psychics or enthusiasts of ESP, it is not uncommon to find that we have no clear account of how we came into the possession of knowledge we are sure that we have. The messages that we receive from the world around us add up, sometimes in uncanny ways, to more than the sum of their parts.

I am calling this residual “surplus knowledge.” By this I mean the quantum of knowledge that does not arrive via the thought processes of which we are aware and over which we have self-conscious control. Beginning from this axiom, my overall argument runs like this: Surplus knowledge exists, as a fact of human nature; over the course of history cultures have developed different strategies for getting a grip on it; and divination is just the most robust ancient version of such an attempt. By “get a grip,” I mean to acculturate this surplus knowledge, fit it into a coherent worldview, and to some extent regulate it to make it socially useful. According to this account, divination will be best understood as driven not mainly by exotic theological commitments, nor by primitive minds tempted by superstition, nor by political ambitions to manipulate the masses; but rather by an underlying characteristic of the nature of human cognition. Thus the rich political and social dimensions unfold posterior to, and as an epiphenomenon of, the Greek mode of acculturating this peculiar zone of knowing. The theology is not the cause, but rather just the authoritative local language, if you will: the favored classical means to express and describe a durable human experience.

The best modern analog to ancient divination by this account is not horoscopes, palmistry, or tarot cards, since these and similar practices are esoteric and self-consciously marginal, mostly engaged in when no one is looking or from an ironic distance. On the contrary, within the classical thought-world, divination sits in a position more or less analogous to that of the modern concept of intuition, in the way it is understood by non-specialists. Both are widely accepted, socially authorized placeholders to mark those things we know without quite knowing how we know them. Neither category is fully understood when used in the common parlance of their respective discourses, and this under-theorized nature is vital to their usefulness for general audiences. Such categories are provocative, and intellectuals produce studies to try to figure them out. Like modern intuition, divination gave the ancients a way to talk about surplus knowledge, though the whole phenomenon remained (as it still does) somewhat squirrely.

Of course, this line of argument needs to reckon with a very old division in the field, between the classes of natural and technical divination, attested to by ancient authorities, including Plato (*Phaedrus* 244) and Cicero (*De div.* 1.6, 18; 2.11).¹⁷ Divination by nature happens through an inspiration that produces an oracle, dream, or daytime vision in the recipient's mind, while technical divination proceeds by the interpretation of signs in the surrounding environment. Although the first is congenial enough to the idea of an alternative mode of cognition, given that it centers on altered states of mind, the second appears not to be, since it proceeds by the application of self-conscious inferential logic to empirically gathered external signs. Plato and Cicero both speak of the thought processes involved in these classes as being divided in this way.¹⁸ But a recent treatment by Michael Flower has shown the general fuzziness of this distinction, outside of the testimony of these two.¹⁹ Technical and natural divinatory techniques often accompanied one another, and dream divination appears on both sides of the divide. Flower has pointed to rhetorical motivations behind both Plato's and Cicero's distinction between the modes of thinking involved in the two forms. The Stoic Posidonius treats the two modes of thinking as congruent.²⁰

This brings up another point of note. For the Greeks, in almost all cases (and mostly for Romans as well), the discernment of the external sign is a strenuous process that resists neat formulation, parallel to oracles or dreams. The gnarled traditions that try to systematize these practices make this obvious. The loci on which technical divination unfold almost never provide high-contrast evidence of strict black and white. Flights of birds are erratic, entrails have no straight lines, and discerning the degree of greediness with which chickens eat their grain is subject to ambiguity. Even the relentlessly regular movements of the heavenly bodies become so laden with interpretive schemata that the lore of astrology remains, let us say, murky. On the Roman side, the augural laws, like the astrological treatises, are another interesting case. The expanse of the literature, and the profusion of rule making, looks much more like something set up to thwart the application of inferential logic than to facilitate it. It offers any interpreter

¹⁷ For contemporary scholars' views, see Flower, *The Seer in Ancient Greece*, 84–91 and Johnston, *Ancient Greek Divination*, 9, 17, 28.

¹⁸ Plato *Phaedrus* 244C–D; Cicero *De divinatione* 1.2–4.

¹⁹ See Flower, *The Seer in Ancient Greece*, 84–91; and see also Philip Peek, "The Study of Divination, Past and Present," in *African Divination Systems: Ways of Knowing* (Bloomington: Indiana University Press, 1991), 12, cited in Flower, *The Seer in Ancient Greece*.

²⁰ Cicero *De div.* 1.118–32.

a wide array of choices, a kind of jurisdiction-shopping. Jerzy Linderski's famous efforts to work through the laws help prove the point.²¹ On the Greek side, we simply do not have *any* surviving tract, let alone the collection of tracts one would expect, to attest to an impulse toward the development of standard rules for interpretation in any of the technical varieties of divination, including such prominent ones as entrail—or bird—reading.²² If such practices had actually been based on discursive inference from straightforward observation of signs, guided by the collection of lore (such as Cicero describes it at *De divinatione* 1.2, 72) one would have expected to find a convergence on practicable rules. The Babylonian materials show some differences on this score, but also some similarities.²³

Now, the absence of clarity with respect to such phenomenon, from a functionalist perspective, of course, looks like the diligent production of refuges for the system when particular instances result in failure. This is no doubt the case. From the perspective here, though, there is an orthogonal point to be drawn. From within the cognitive reality of the system, it speaks to a cultural attempt to make space to precipitate a non-inferential, non-discursive mode of knowing, at the moment of observation. The reading of livers on the battlefield is closer to a gut-check, so to speak, than to a logical calculation; and the mode of cognition most salient in riddling out an answer from most of the rest of the technical forms remains as inscrutable as it does in the natural ones.²⁴

FURTHER CONSIDERATIONS

If divination is more like surplus knowing than like occult religion, it is easier to understand why ancient philosophers commonly thought it

²¹ Jerzy Linderski, "The Augural Law," *ANRW* ii.16.3 (Berlin: de Gruyter, 1975), 2146–2312.

²² Dreams come closer to achieving this; see Daniel E. Harris-McCoy, trans., Artemidorus, *Oneirocritica* (Oxford: Oxford University Press, 2012).

²³ See Francesca Rochberg, "'If P, Then Q': Form and Reasoning in Babylonian Divination," in *Divination and Interpretation of Signs in the Ancient World*, ed. Amar Annus (University of Chicago, Oriental Institute Seminars, 6; Chicago: Oriental Institute, 2010). See also J. Bottéro, *Mesopotamia: Writing, Reasoning, and the Gods* (Chicago: University of Chicago Press, 1992), 125–38; and Rochberg, *The Heavenly Writing: Divination, Horoscopy, and Astronomy in Mesopotamian Culture* (Cambridge: Cambridge University Press, 2004), 268–71.

²⁴ On sortition as a whole, see Johnston, "Lost in the Shuffle: Roman Sortition and Its Discontents," *Archiv für Religionsgeschichte* 5 (2003): 146–56. See also Nathan Rosenstein, "Sorting Out the Lot in Republican Rome," *American Journal of Philology* 116 (1995): 43–75, cited in Johnston, *Ancient Greek Divination*, 147.

worthwhile to try to explain it. The philosophers do not typically theorize seriously about almost any religious practices.²⁵ When they approach questions having to do with religion, they theorize about the nature of the gods, not praxis. The comparatively rich tradition of thinking about divination is an outlier here. We can better comprehend why it piqued their curiosity when we realize that they could understand it as a way of knowing, an area in which they had established interests.

When the topic is positioned as it is here, another curious piece of information, which as far as I know has never been recognized, finds an explanation on a linguistic level. Greek has a rich vocabulary for cognitive processes. There are words for reason (*λόγος*), calculation (*συλλογισμός*), discursive reasoning (*διάνοια*), opinion (*δόξα*), belief (*πίστις*), wisdom (*σοφία*), practical wisdom (*φρόνησις*), a rational mind (*νοῦς*), and scientific knowledge (*ἐπιστήμη*), among many others. But there is no good fit within this domain for what we mean in English when we use the term “intuition”—which the *Oxford English Dictionary* describes as an immediate apprehension of something without the intervention of any reasoning process. Even Greek words for surmising, like *ὑπονοέω* or *ἐπεικάζω*, point to unsure, speculative inferences, not to insight that arrives *without* inference. If one does a search (which electronic tools make possible) of the English side of the standard Greek and Latin lexica, one finds there that nowhere have scholars seen fit to assign the English term “intuition” to any particular element of the Greek or Latin language.²⁶ But, then, one might next think, if Greeks or Romans didn’t have a single term for it, perhaps instead they used some standard phrase that might not be picked up at a dictionary-level analysis of the language. If that were the case, we would expect that any such larger phraseology would be captured when translators sat down to render classical texts into English. If one turns next to standard translations of much of the core Greek and Latin corpus made available by the Perseus project, which at the time of this writing housed English renderings of seventeen million words of Greek and Latin literature, one finds that in only precisely six cases did these words suggest to the English translators the term “intuition.”²⁷ This aggregation of scholars’

²⁵ See Johnston, *Ancient Greek Divination*, 4.

²⁶ For exceptions, see Gregory Vlastos, “Cornford’s *Principium Sapientiae*,” in Vlastos, *Studies in Greek Philosophy*, vol. 1 (Princeton: Princeton University Press, 1995), 118 (reprint of a review originally published in *Gnomon* 27 [1955]: 65–76). A few terms that show up in late Greek, among the Neoplatonists, stretch over to meaning “intuition” (*ἐπιβολή*, *προσβολή*, *ἀνεκνόητος*; *ἐπαφή* could be added, but LSJ does not include it).

²⁷ Plato *Crat.* 411B (for *μαντεύω*); Plato *Laws* 12.950B (for *θεῖον δέ τι καὶ εὔστοχον*); Plato *Rep.* 4.431E (for *μαντεύω*); Ovid *Met.* 6.510 (for *praesagia*). The remainder are drawn from the category of Aristotle’s customarily rendered “rational intuition” (*νοῦς*),

choices suggests that either: (a) the Greeks didn't think much about the human capacity to know things without self-conscious inference, as contained in my earlier axiom, or (b) the English translators had some aversion to the standard way English talks about this phenomenon when they saw parallel ideas expressed in Greek words, or (c) the Greeks thought we had such a capacity and just expressed it in a cultural form sufficiently different from our own that it shows up in entirely different terms. I here argue for (c). Their way of talking about the cognitive capacity that in common English parlance is called "intuition" is through their very robust cultural construction of divination. Consonant with this view: of the six instances where translators introduce the English term intuition into the translations housed in the Perseus database, four of them serve as translations of ancient metaphorical uses of Greek or Latin terms for divination.²⁸

TEST CASE: PLATO

To give an example of the kinds of results possible from this general approach, I will take a brief look here at the case of Plato. Across his corpus, Plato regularly references divination as a literary motif. It is woven deeply into the fabric of prominent dialogues, including the *Apology*, *Phaedrus*, *Phaedo*, and *Symposium*, and shorter references to it pepper other works as well. In fact, though it may sound strange, one could say that divination comes up *very* frequently in Plato's work, almost as frequently as another topic in which he has complex interests, poetry. Just as with poetry, Plato saw in divination a rich source of cultural authority that he was keen on reshaping for his own ends. The rather dramatic imbalance between modern scholars' abundant attention to his poetics and the comparative dearth of consideration of his ideas on divination doubtless reflects modern concerns more than ancient ones. We are used to the idea that even when Plato is being ironic or critical or mocking, we can gain insight from him about poetics and poetry itself. And just as one needn't solve precisely how seriously Plato took poetry in some global sense to gain such insights, so also we can learn about divination.

Plato references divination in three main clumps in the corpus. The characteristic that runs through them all is that divination is a form of knowledge that is non-discursive, arrives in a flash, not as the result of a

used in *Nicomachean Ethics* 6.8 and 6.11, for the faculty that apprehends first principles (1142A23–30 and 1143B6). Cf. *Posterior Analytics* 2.19.

²⁸ Ibid.

volitional self-conscious desire, and does not account for itself. First, he sometimes has figures pose as oracles to shield themselves from elenctic cross-examination. In this evidence (*Statesman*, *Theaetetus*, *Euthyphro*, *Cratylus*), Plato uses divination to mark a kind of knowledge that seems mostly to hang back, taking refuge in the privilege of silence that its social prestige allows. It does not give an account of itself because its practitioners assume it does not need to. Similarly, in the next two clumps, divination stands for a kind of knowledge that does not account for itself—but here the lack is not because such an explanation is not *required*, it's because it is not *possible*. It isn't a case of grandiose overreaching on the part of the knower so much as that of an impulse toward epistemological humility in the face of the inscrutability of the thing known. In what I would call clump two, Plato commonly uses divinatory language to describe what apprehension we might be able to have of grand transcendent things—such as the forms or the Good itself (*Symposium*, *Charmides*, *Philebus*, and especially *Republic*). At these points in his argument, Plato makes clear that knowledge of such things could not be the result of sequential discursive reasoning that gathers data from the thoroughly compromised natural world, applies the rules of *logos*, and then draws inferences. Rather, it arrives like a flash of insight or a memory that flits into consciousness, or, he often says explicitly, like a divinatory vision. Finally, he also uses divination language in a third clump of texts to describe the kind of knowledge one could acquire of another inscrutable realm, this one at the opposite end of his ontological scale. The world of the material and matter is too unstable to yield secure knowledge, and at several points in the corpus (*Republic*, *Meno*) he uses divinatory language to articulate our attempts to know it. Over this broad array of evidence, it is best to say that Plato makes divination into an emblem of *non-discursive knowledge*. He references it in a variety of tones, sometimes mocking, sometimes neutral, sometimes with a rather profound sincerity.

These clumps of texts provide a window into what Plato thinks divinatory knowledge is like. He treats the question of what divination itself is most directly when he looks at dreams in the *Timaeus* (69B–72D)—a passage parallel in some respects to his treatment of poetry in the *Ion*. The *Timaeus* contains Plato's most robust thinking on the material world, working through cosmogony and anthropogony. He speaks of the creation of the universe as the creation of a cosmic living animal (*zōon empsuchon*; 30B8) and narrates that the race of humans was fabricated in its image (27C–441D). The cosmic animal has a unitary, rational, immortal soul, and the original men were given a share of it. This is their reason, and it is

situated in the head. But they also get a lower, mortal kind of soul that has two parts. The spirited part is in the chest above the midriff, and the appetitive soul is below, according to him chained like a wild beast in our lower parts.

All three parts of the soul, even the lowest, engage in distinctive cognitive activities, which Plato relates to their internal movements. The rational intellect operates like our internal gyroscope. It is a pair of nested, spinning circular bands. One of these bands spins in alignment with the motion of the fixed stars and allows us to recognize Sameness; the other spins in alignment with the planets of the ecliptic and allows us to see Difference. These two together form our reason. When the gods were first creating humans, they set these souls inside bodies, which disrupted the spinning in a rather frightening process:

The souls, then, being thus bound in a great river neither mastered it nor were mastered, but with violence they rolled along and were rolled along themselves, so that the whole of the living creature was moved, but in such a random way that its progress was disorderly and irrational. (43A–B)

He claims this tumultuous stage to be the advent of the perceptions, as the soul is battered and pummeled by coursing exterior movements. At this stage souls are driven by hunger to take in as much as they can of what is around them, and they don't have self-conscious, goal-directed, higher-order purposes. The rational soul is in a state difficult to distinguish from the appetitive soul. But this does not last forever. As early humans matured, the rational soul was calmed and began to regain its rational capacities by returning to the state of spinning outlined above.

But when the stream of increase and nutriment enters in less volume, and the revolutions calm down and proceed on their own path, becoming more stable as time proceeds, then at length, as the circles move each according to its natural track, their revolutions *come into alignment* and they designate the sameness and difference correctly, and thereby they render their possessor intelligent. (44B; emphasis mine)

This moment in the phylogenetic production of humans is repeated in each ontogenetic iteration. For each of us, from birth until the onset of adulthood, the rational soul isn't quite spinning right yet, and this makes it subject to great perturbing flows—exacerbated by the youth's strong need for

food to produce growth—and so immature people move chaotically, not having yet settled into their orbits. After the higher-order soul does settle in and find alignment, it begins rational thinking. In addition, the lower two parts of the soul also have their own forms of cognition. The middle soul uses passion to stir us up toward the ends envisioned by reason. Even the soul’s lowest, animalistic part has its moments, and this is where divination enters.

The lowest soul mostly lurches about and operates by appetitive desires (44B, 90D). Descriptions of this process are nearly identical to those of the disordered soul above. But occasionally, and more often during sleep, when the other two parts are dormant, the animal part can become soothed, and when it does, it can temporarily begin to spin in alignment as well (71D). It does this with the help of the liver. To regulate the lower soul, the gods settle the liver below the midriff. Its regulating function parallels that of the heart and lungs within the spirited part, above it. The liver, which is dense, smooth, and shiny (as well as being both bitter and sweet) functions as a kind of screen or mirror on which the highest part of the soul, contained in the head, can issue a corrective display. The correctives arrive from above in the form of “discursive thoughts” (*διανοήματα*), which the liver’s surface translates into the rudimentary imagistic language that the lower soul understands. The liver receives impressions (*τύποι*) from above and mirrors back phantom images (*εἰδωλα*). These can be frightening, to scare the lower soul into submission, or they can be soothing, when that is called for. When, with the help of the liver, the lower soul becomes calm, it becomes capable of experiencing a distinctive kind of cognition. At these times, it performs divination through dreams; Plato says:

And when, in turn, a certain inspiration from discursive reasoning paints opposite images of gentleness, and provides a respite from the bitterness, because it refuses to move or to touch what is naturally opposite to it, and by using the sweetness innate throughout the liver, and by setting all parts of it *back into alignment*, making them level and autonomous, it makes the part of the soul settled around the liver propitious and bright. And it makes that part of the soul pass the night temperately, experiencing divination during sleep, since it has no share of reason and purposive intelligence. (71C–D; emphasis mine)

When it comes into alignment, in a process that mirrors what happened to the rational soul at maturation, it is able to achieve its own kind of insight.

Plato does not imagine that this process would be able to achieve any monumental understanding of the shape of the universe. Rather, he imagines a discrete realm of narrow knowledge that could turn out to be useful. He calls it a phantom image of daytime intellectual activity. He says the gods granted this capacity to the very lowest part of our soul as a compensation to it. They “rectified the vile part in us,” he says, “by establishing divination there, so that it might in some degree lay hold of the truth.” These qualifications are typical in the philosophers. Further, they are in fact not out of keeping with the larger cultural practice. Greeks turned to divination for local kinds of incremental insight, to see around the corner of the coming day or hour, but never to reveal hidden profound truths about the cosmos. This is a difference from a tradition of prophecy that emerges out of the ancient Near East, but is not at home in Greece until the Hellenistic period.²⁹ The general spirit of Plato’s treatment (though not the details), in which he lands on a kind of alternative cognitive system to explain divinatory insight, is in keeping with what the later philosophers work out as well.

DIVINATION IN THE HISTORY OF SURPLUS KNOWLEDGE

In another potential gain in our understanding, by setting divination within its cognitive context, we open up the possibility for a larger history to come into view. If the overall picture presented here is correct, then surplus knowledge, considered as a feature of human cognitive capacity, would presumably have been noticed and made salient in different cultural and intellectual formations over time, and it should be possible to tell a history of it, in which ancient divination and modern intuition would be the book-ends of a series of attempts to understand and describe it. Such a study will be a very large undertaking, but there is enough low-hanging fruit to set out a few very general parameters.

As a first step, it is important to recognize that intuition will have more than one history. Within the philosophical context, “rational intuition,” as it is commonly called, is understood as an immediate apprehension of fundamental prerequisites to discursive intellectual activity. In a masterful

²⁹ See Reinhold Merkelbach and Josef Stauber, “Die Orakel des Apollon von Klaros,” *Epigraphica Anatolica* 26 (1996): 1–53; for further discussion, see Robin Lane Fox, *Pagans and Christians* (New York: Knopf, 1987), 168–84, and Johnston, *Ancient Greek Divination*, 78–82.

overview of the topic, Richard Rorty marked out the main contours of it in an article in the *Encyclopedia of Philosophy* (1967). He speaks of the acquisition of three types of bedrock intellectual items—concepts, rules of logic, and sensory ground truths—that form the necessary preconditions of knowledge. This scholarship clearly separates rational intuition from any more popular idea of a hunch that turns out to be right, which Rorty identifies as a fourth, philosophically inconsequential strand of thinking under the term intuition; it is “unjustified true belief not preceded by inference.” But Plato (as well as Aristotle, the Stoics, and the Neoplatonists) imagined divinatory insight as something precisely like a hunch, and addressed it as a question of philosophical interest.

In addition to the philosophical tradition of studying “rational intuition,” there is another scholarly literature, which has expanded widely in the decades since Rorty’s article, though mostly without conversation with the discourse of philosophical epistemology, in which the idea of intuition has also played a central role.³⁰ In empirical research in psychology and cognitive science, the salience of phenomena that would fit under the “hunch” category of Rorty’s typology has recently risen greatly. “Cognitive intuition” speaks not of a capacity to acquire fundamental intellectual quanta, but a more expansive one. Scholars in the psychological sciences have been able to discern cognitive capacities that result in what I have here called surplus knowledge. The field has yielded striking results, tracking examples of people knowing things, nondiscursively and without self-conscious inference, that seem as though they could only have resulted from discursive reasoning. Various subfields explore different facets of the topic, as the recent overview treatment of Osbeck and Held has shown.³¹ We see understandings of intuition as a primitive cognition that steers evolutionary forces by advancing survival and facilitating adaptation. Other scholars associate it with the category of implicit learning, which takes place underneath the attention of the subject, is associative and works by similarity and contiguity, and is not symbolic nor does it work by a rule structure of logically fixed relations. Scholars have further invoked the category to describe one-half of various two-process models of cognition—the most well-known is Kahneman’s “thinking fast and thinking slow”—marking out a region of quick, pre-attentive, preconscious processing.³² All these scholars are after

³⁰ Lisa M. Osbeck and Barbara S. Held, eds., *Rational Intuition: Philosophical Roots, Scientific Investigations* (Cambridge: Cambridge University Press, 2014).

³¹ *Ibid.*

³² Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus, and Giroux: 2011).

a verifiable description of the modes through which humans process information.

To a greater degree than studies within philosophical epistemology, this line of work shows connection, in subject matter though not in methodology, with the studies the ancient philosophers undertake of divination. I am cautious to add that contemporary scholars working in these areas may well be quick to resist such an assertion, since their work commonly dissociates the kinds of scientifically observable and verifiable phenomena they find in clinical studies from the mystical penumbra of soothsaying or clairvoyance. However, what is at stake here is not popular fantasies regarding seers, but the hard-nosed study undertaken in ancient philosophers' accounts: of observable and provocative phenomena, of people sometimes being able to see around corners, or see through things, in ways that defy appeal to the customary pieces of our cognitive apparatus.

A synthetic account of the two traditions of rational and cognitive intuition has not yet been produced. The epistemologists are disinclined to cross into terrain associated with extravagant claims (at least by non-specialists); and the experimental psychologists needn't, exactly, wrestle with the history of epistemology to measure the effect of implicit learning or alternative information processing in their subjects. Further complicating the matter is the imbalance of scholarly development in the *history* of these two categories. The history of rational intuition has been thoroughly studied, beginning from an origin in Aristotle's notion of *nous*, according to the still influential reading of Ross,³³ and proceeding to Spinoza³⁴ (though Epicurean *ἐπιβολή* could be enlisted), then to Descartes's nonsensory *intuitus*,³⁵

³³ For a recent overview of the question, along with some suggested revisions of the traditional views, see Robert Bolton, "Intuition in Aristotle," in Osbeck and Held, *Rational Intuition*, 39–54; Victor Kal, *Aristotle on Intuition and Discursive Reason* (Leiden: Brill, 1988); and the modern locus classicus, W. D. Ross, *Aristotle's Prior and Posterior Analytics* (Oxford: Oxford University Press, 1949). See also Terrance Irwin, *Aristotle's First Principles* (Oxford: Oxford University Press, 1989), 134–50; Han Baltussen, "Did Aristotle Have a Concept of 'Intuition'? Some Thoughts on Translating *Nous*," in *Greek Research in Australia: Proceedings of the Sixth Biennial International Conference of Greek Studies, Flinders University, June 2005*, ed. Georgina Tsioris, Elizabeth Close, Michael Tsianikas, and George Couvalis (Adelaide: Department of Languages–Modern Greek, Flinders University), 53–62. Renderings for *nous* in this context include: "intellectual intuition" (Ross), "mental intuition" (Alan), "intellect" (Grote), "intuitive reason" (Lee, Ross); see Baltussen, "Did Aristotle Have a Concept of 'Intuition'?", 56.

³⁴ See Steven M. Nadler, *Spinoza's Ethics: An Introduction* (Cambridge: Cambridge University Press, 2006), 181–85; Yirmiyahu Yovel, *Spinoza and Other Heretics*, vol. 1, *The Marrano of Reason* (Princeton: Princeton University Press, 1989), 154–65. For connections between Spinoza and contemporary cognitive science, see Antonio Damasio, *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain* (New York: Harcourt, 2003), 3–8, 274.

³⁵ See especially Descartes, *Rules for the Direction of Our Native Intelligence*, rule 3.

which, along with Kant's *Anschauung*, anchor the idea in modern epistemology as well. Kant in particular informs the Romantics and their desire for an immediate apprehension of things.³⁶ Fichte and Schelling both propose a sense of immediate knowing by way of developing Kant's ideas.³⁷

By contrast, the history of cognitive intuition has rarely been approached as a whole. It is likely that it could be and that some accounting for the parallel centrality of the notion of non-discursive and non-inferential knowing in the two discourses would pay mutual benefits. As we saw in outline form above, Plato speaks of capacities analogous to those present in the rational intuition of Aristotle's *nous* in his discussion of the immediate, non-discursive apprehension of the forms, and Plato uses the language of divination to express this (these make up most of the handful of standard translations of classical texts that find use for the English "intuition"). While the scholarship has rightly pointed out the differences between the two (particularly on their valuing of dialectic as a mechanism), it has given shorter attention to their commonality. While each uses a different language, both imagine a distinctive, non-inferential character to the acquisition of fundamental categories of rationality. According to the history pointed to here, Plato would represent a moment prior to the separation of rational and cognitive intuition by Aristotle, that is, *prior* to the development of a language of *nous* separate from that of *mantikê*.

It is also surely of interest that when medieval theologians coin the term *intuitus* (which in classical Latin was limited to descriptions of vision) they use it to speak about a non-discursive knowing that particularly characterizes the divine cognition of angels.³⁸ This is the avenue by which the term intuition enters the modern European languages. Thomas Aquinas proposes that angels understand things all in a flash, without recourse to sequential reasoning and inference (*Summa Theologica* IA.58). The mode of angelic intuition surely has connections with the history of rational intuition. But given that the medieval topic is centrally concerned with divine

³⁶ See Jennifer Mensch, "Intuition and Nature and Kant and Goethe," *European Journal of Philosophy* 19 (2011): 431–53.

³⁷ See Moltke S. Gram, "Intellectual Intuition: The Continuity Thesis," *Journal of the History of Ideas* 42.2 (1981): 287–304; Dale E. Snow, *Schelling and the End of Idealism* (Albany: SUNY Press, 1996), 55–66.

³⁸ Anselm *Proslogion*, chaps. 14 and 18. Thomas Aquinas *Summa Theologica*, 1A56.1; 55.2; 58.6–7. See Harm Goris, "The Angelic Doctor and Angelic Speech: The Development of Thomas Aquinas's Thought on How Angels Communicate," *Medieval Philosophy and Theology* 11 (2003): 87–105. For some further parameters of these developments, see Jerome V. Brown, "Henry's Theory of Knowledge: Henry of Ghent on Avicenna and Augustine," in *Henry of Ghent: Proceedings of the International Collo-*

knowing, it also carries echoes of ancient conceptions of divinatory knowledge. When humans are able to think according to intuition, as certain of the Scholastics imagine they can, they are partaking of mode of knowing that resides with the divine.³⁹ Of further interest, the appeal to angels in the medieval discussion echoes a consistent appeal to the realm of intermediate divinity (typically under the designation of the demonic), which plays a critical role with regard to divination in classical texts.

This cognitive capacity plays a part in the work of Milton, during a conversation Adam has with the archangel Raphael over plates of fruit on his grassy table in the garden of Eden. Milton took bold steps to draw out the connections between divine and human realms. Not only did angels partake of human food, but also humans could sometimes partake of the angelic onrush of knowing. Raphael says reason comes in two varieties: “Discursive, or Intuitive; discourse / Is ofttest yours, the latter most is ours, / Differing but in degree, of kind the same” (5.488–90).⁴⁰ It seems that intuitive reason is precisely what Adam uses to name the animals. Full knowledge of them arrives to him without a need to think about it: “I named them, as they passed, and understood / Their nature, with such knowledge God endued / My sudden apprehension” (8.352–54). This kind of knowing could possibly fit into the history of rational cognition, perhaps under Rorty’s third category of nonpropositional knowledge of an entity. But it may also have a place in a history of cognitive intuition. Adam’s sudden apprehension provides him knowledge of the animals’ full natures, beyond just recognizing them as discrete categories, which suggests the kind of knowledge that would otherwise come from systematic discursive inquiry.

As the modern era advances, we also see developments that would be a potential fit for a history of cognitive, rather than rational, intuition. Erasmus Darwin—physician, natural philosopher, grandfather of Charles Darwin, and poet, his life spanning the eighteenth century—wrote to moderate

quium on the Occasion of the 700th Anniversary of his Death, 1293, ed. W. Vanhamel (Leuven University Press, 1996), 19–42.

³⁹ See in particular the ideas of Duns Scotus, outlined in Robert Pasnau, “Cognition,” in *The Cambridge Companion to Duns Scotus*, ed. Thomas Williams (Cambridge: Cambridge University Press, 2002). For a connection between intuition and prophecy in Duns Scotus, see Mary Beth Ingham and Mechthild Dreyer, *The Philosophical Vision of John Duns Scotus: An Introduction* (Washington, D.C.: Catholic University Press, 2004), 29. For an overview of Duns Scotus’s position in the period as a whole, see Marcia Colish, *Medieval Foundations of the Western Intellectual Tradition: 400–1400* (New Haven: Yale University Press, 1997), 306–11. I thank Marcia Colish for these observations.

⁴⁰ See Patrick J. Cook, “Intuition, Discourse, and the Human Face Divine in Paradise Lost,” *Essays in Literature* 23 (1996): 147–64.

acclaim a set of poems accompanied by philosophical commentary in which he develops the idea of “intuitive analogy,” whereby we non-discursively and unconsciously assimilate present experiences to our stock of past ones and consolidate our basic sensations. We are able to do this because certain patterns are stamped into nature, ourselves included, and when we sense them in the external world, they are activated internally.⁴¹

In the nineteenth century, the expanding field of human physiology brought further developments in the history of cognitive intuition. Flush from locating the electrical and chemical impulses that made the human organism function, and working from Descartes and his ghost-in-the-machine dualism, scientists quickened their interest in the phenomenon of reflex action. These muscular movements happen irrespective of our volition, operating by the machinery not the ghost, and they set the physiologists to wondering whether there were analogous cognitive systems at work. These scientists worked over the terrain more thoroughly than anyone since antiquity. William Carpenter, author of the standard anatomy textbook for most of the century, which was reissued in many editions and grew to a thousand pages, took a particular interest in the physiological basis of cognitive functions.⁴² He reports his discovery of a sub-volitional form of thinking called “unconscious cerebration.” In a special additional textbook on *Mental Physiology*, Carpenter concludes that “a large part of our intellectual activity . . . is essentially *automatic*”⁴³ (emphasis in the original). Among chapters such as “Of the Nervous System,” “Of Sensation,” and “Electro-Biology,” he devotes one chapter to unconscious cerebration. He describes it as a short-circuiting of normal rational thought: it hums away, processing information and achieving insights, without our realizing it. It becomes a stewing pot into which insights drop to simmer into full-fledged ideas. Just as, in the system of our musculature, external stimuli might produce impulses that move through the spinal cord to give rise to reflex motor movements, so, too, in the tissue of our brains we experience ideo-motor reflexions that take place along an unselfconscious track of information processing. He provided a chart (Fig. 1) as an illustrative aid to show the pathway of “ideo-motor reflexion” via which unconscious cerebration proceeds.⁴⁴ The idea became widely popular and held a fascination

⁴¹ See Devin S. Griffiths, “The Intuitions of Analogy in Erasmus Darwin’s Poetics,” *Studies in English Literature, 1500–1900* 51, no. 3 (2011): 645–65.

⁴² William Benjamin Carpenter, *Principles of Human Physiology* (Philadelphia: Lea and Blanchard, 1842), 50.

⁴³ William Benjamin Carpenter, *Principles of Mental Physiology* (London: H. S. King and Co, 1874; repr., Cambridge: Cambridge University Press, 2009), 515.

⁴⁴ Reproduced from Carpenter, *Principles of Human Physiology*, 441.

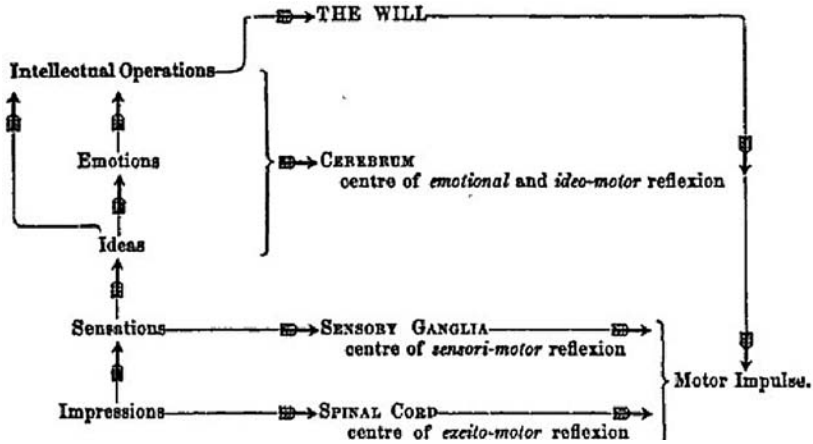


FIGURE 1. Diagram of the cerebro-spinal apparatus, William B. Carpenter, *Principles of Human Physiology*, 5th American ed. (Philadelphia: Blanchard and Lea, 1853), 650.

for pivotal literary figures in an era that, as one scholar recently characterized it, was an era that saw the opening of realism “to the uncertain processes of the organism.”⁴⁵ Among its propagators were figures as diverse as Oliver Wendell Holmes, Mark Twain, and the inventor of the telephone, Alexander Graham Bell, who wrote:

I am a believer in unconscious cerebration. The brain is working all the time, though we do not know it. At night, it follows up what we think in the daytime. When I have worked a long time on one thing, I make it a point to bring all the facts regarding it together before I retire; and I have often been surprised at the results.⁴⁶

In his preface to *The American*, Henry James relates how the novel grew from an abrupt insight that hit him upon his arrival into the sensory rush of Paris and that he then dropped into a “deep well of unconscious cerebration.” And in his *Autobiography*, Herbert Spencer, the father of social Darwinism, explains how he came upon his ideas: “The conclusions, at which

⁴⁵ Randall Knoper, “American Literary Realism and Nervous ‘Reflexion,’” *American Literature* 74, no. 4 (December 2002): 717. Cf. Vanessa Ryan, *Thinking without Thinking in the Victorian Novel* (Baltimore: Johns Hopkins University Press, 2012).

⁴⁶ Cited by Orison Swett Marden, *How They Succeeded: Life Stories of Successful Men Told by Themselves* (Boston: Lothrop, 1901), 33.

I have from time to time arrived . . . have been arrived at unawares—each as the ultimate outcome of a body of thoughts that slowly grew from a germ.”⁴⁷

Contemporary advances in the cognitive sciences mentioned above have recently given a pronounced salience to non-discursive modes of thinking, with various invocations of the term intuition. These would clearly be a part of the history of cognitive intuition. In the decades preceding Kahneman’s *Thinking, Fast and Slow*, scholars including Antonio Damasio, Nalini Ambady, Timothy Wilson, Nicolas Epley, Gerd Gigerenzer, and many others brought a new kind of respectability to the claim that our ways of knowing are many and diverse and that some non-trivial portion of the actionable knowledge we assemble at any given time arrives to us by ways other than self-conscious, goal-directed, inferential chains of thought.⁴⁸ This work has spurred broad interest and many popularizing accounts, one vivid example of which appeared in a newspaper story during the height of the Iraq War.⁴⁹ While the US Army was being menaced by hidden improvised explosive devices, certain soldiers appeared to their comrades to have preternatural abilities to sense the presence of these bombs. The army, in a deeply pragmatic spirit, poured money into studies of such people, trying to see whether there was anything to the anecdotes. Cognitive scientists determined, in a finding not at all surprising to those familiar with the discipline, that some soldiers indeed had more accurate predispositions to sense trouble than others. It is of course more than just uncanny that two millennia ago the single arena in which the seer’s gifts were most consistently valued was also the battlefield. Then as now, people become interested in surplus knowledge precisely in cases in which it would be most valued: when the right twitch at the right time means huge differences in outcome and a lot is riding on people who get the right gut feeling.

⁴⁷ Sonu Sharmdasani, *Jung and the Making of Modern Psychology: The Dream of a Science* (Cambridge: Cambridge University Press, 2003), 120–21. Farzad Mahootian and Tara-Marie Linné, “Jung and Whitehead: An Interplay of Psychological and Philosophical Perspectives on Rationality and Intuition,” in Osbeck and Held, *Rational Intuition*, 395–420.

⁴⁸ Antonio Damasio, *Descartes’ Error: Emotion, Reason, and the Human Brain* (New York: Putnam, 1994; rev. ed., New York: Penguin, 2005); Nalini Ambady and John Skowronski, eds., *First Impressions* (New York: Guilford Press, 2008); Timothy Wilson, *Strangers to Ourselves: Discovering the Adaptive Unconscious* (Cambridge, Mass.: Belknap Press, 2002); Nicholas Epley, *Mindwise: Why We Misunderstand What Others Think, Believe, Feel, and Want* (New York: Knopf, 2014); Gerd Gigerenzer, *Gut Feelings: The Intelligence of the Unconscious* (2007; repr., New York: Penguin, 2008).

⁴⁹ Benedict Carey, “Brain Power: In Battle, Hunches Prove to be Valuable,” *New York Times*, July 27, 2009.

The ancient philosophers' approaches to divinatory phenomena belong to a historical stream of attempts to understand cognitive intuition, the mechanism that results in surplus knowledge. While the differences are manifold, there is likely to be a connection between their philosophical attempts to account for divinatory insight; Thomas Aquinas's interest in instantaneous angelic thinking; Milton's idea that humans might be able to do it, too; William Carpenter's search for unconscious cerebration; and even the approach of contemporary cognitive scientists. All these investigators try to offer an account of the processes of momentary, non-discursive apprehension that do not seem to fall under our self-conscious control. This is not to say that the thinkers in this long line have come to the same conclusions—they have not. But the similarities in their approaches to the question promise to be instructive.

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