1 Introduction

Divination, broadly understood as the practice of seeking knowledge of the unknown, holds significant importance and is prevalent across diverse human societies and throughout historical times. As a prominent anthropological subject, divination has been extensively documented and theorized by not only anthropologists but also historians (Johnston, 2009), psychologists (Smith, 2010), sociologists (Park, 1963), as well as scholars in the humanities and social sciences at large. The plethora of studies on divination, however, has been characterized by many inconsistencies: Divination has been described as intuitive (Struck, 2016) and deliberate (Kiernan, 1995), mystical (Saniotis, 2007) and empirical (Zeitlyn, 2021), and anxiety-relieving (Kuo & Kavanagh, 1994) and anxiety-inducing (Hong & Henrich, 2024) among other dichotomies. Some of these apparent inconsistencies are rhetorical, with scholars emphasizing what they consider under-researched aspects of divination or reacting against existing stereotypes. Yet at the same time, these contrasting characterizations also highlight the richness of divination, demonstrating its capacity to span a broad spectrum of diverse dimensions.

Much work has been devoted to examining the forms and functions of divination, and my goal in this Element is a modest one, with two specific aims. The first is to offer an up-to-date, naturalistic account of divination (in doing so I'll directly address its thorny definitional issue), and the second is to highlight why a cognitive approach is the most productive way of understanding divination. By "naturalistic account" I mean a theoretical framework that views divination as a natural product of human psychology and cultural transmission, free from the technical jargons that tend to mystify it,[1] and by "cognitive approach" I refer specifically to information production and individuals' mental processing of such information. Essentially, I advocate a "return to common sense" perspective by arguing that at its core, divination is what it appears to be: methods to generate information, usually to assist subsequent decision-making. Therefore, most divinatory practices are primarily cognitive activities and should be viewed as such (Hong & Henrich, 2021), and a key puzzle that this Element seeks to address is the persistence and recurrence of many divinatory practices that, from a modern scientific perspective, do not yield accurate information.

Divinatory practices have permeated human societies throughout history. From producing medicines to determining propitious moments for important

[1] This is unfortunately quite common in anthropology, such as "symbolic efficacy" (Langdon, 2007), ontological relativity" (Bråten, 2016), and "hermeneutics of suspicion" (Ringma & Brown, 1991).

events, humans frequently relied on signs or messages generated by the supernatural[2] (Karcher, 1998). The intellectual interest in divination can be traced back to ancient civilizations. Ancient Babylonian diviners explicitly theorized the possibility of divination in a causally interconnected universe (Annus, 2010); Plato thought of divination as a form of divine inspiration (Landry, 2014); Galen, the renowned medical practitioner of ancient Rome, considered medicine and divination as parallel arts while acknowledged divination's relevance in some medical matters (Van Nuffelen, 2014). Note that in explicit theorization of divination ancient scholars have also occasionally cast doubts on its validity. For instance, the famous orator of ancient Rome, Cicero, devoted an entire philosophical treatise *De Divinatione* (Cicero, 44 BCE/1921) questioning the rationale of Roman divination, and the Confucian scholar Xunzi explicitly expressed skepticism toward popular Chinese divination of his time (Lai, 2015).

During the colonial period, traditional forms of divination were described by Western travelers and missionaries as exotic cultural practices incompatible with Christianity (Silva, 2018). These early works mostly focused on the validity and legitimacy of divination with strong normative tones (i.e., whether divination is factually efficacious and/or morally permissible). In contrast, the intense scholarly interest in divination that arose in late nineteenth/early twentieth century Europe treated divination's objective ineffectiveness as a given and started to investigate the psychological, social, and cultural reasons for its persistence. This period also coincided with Europe's mounting intellectual interest in "primitive" [sic] societies, in particular their norms, customs, and rituals that were different from post-Enlightenment Europe (Barnard, 2021). Scholarly discussions on divination that occurred in both armchair theorizing and ethnographic writings during this time period typically subsumed divination into the larger category of magic or treated divination and magic as analogous cultural phenomena, and often offered explanations in cognitive terms. Tylor (1871), for example, implicitly treats divination, along with sorcery, witchcraft, "occult sciences," "black art" and other superstitions as magic, and describes it as parasitic, clinging to other, sounder information-generating methods; Frazer (1890) devotes an entire chapter on divination in his magnum opus *The Golden Bough* where he lays out his theory of sympathetic magic. Early ethnographers held similar views: Evans-Pritchard's (1937) classic ethnography on Azande explicitly discusses divination by feeding chickens poisons and observing whether they live or die (chicken oracle) in the context of

[2] This, of course, begs the question of what constitute as "supernatural." This thorny definitional issue will be discussed in subsequent sections.

magical practices with a thorough investigation of the reasoning processes behind such seemingly exotic practices. This way of interpreting indigenous religious beliefs and practices has been later termed "intellectualist" (Stocking Jr., 1986), meaning that it takes means-ends rationality seriously, and interprets such beliefs and practices as the applications of human beings' cognitive faculties to make sense of their world (Eames, 2016). Later theorists, however, gradually turned away from such positions, and have attempted to account for divination by placing it within evolutionist, diffusionist, ecological, or functionalist theories. Most of these theories rationalize divination after the fact, effectively removing it from the realm of intentional action (Tedlock, 2001).

The rise of symbolism and postmodernism in anthropology has led to a strong rejection of cognitive theories of magico-religious actions in general (Bloch, 2012; Jarvie, 2018), and divination has been interpreted as anything but attempts to obtain accurate information (Boyer, 2020). Granted, there is some heterogeneity in how anthropologists interpret divination, but the overall sentiment towards the cognitive approach is definitively negative (Hong & Henrich, 2024). Robin Horton, a vocal advocate for the intellectualist tradition, commented in 1967 that his thesis on African religious discourses as efforts to explain, predict, and control worldly events "has enjoyed a certain notoriety. Some few scholars have agreed enthusiastically with part or all of it. Others, more numerous, have been affronted . . . All in all, the responses to the article have been predominantly unfavorable" (Horton, 1967). More recently, in a pointed critique of a *Current Anthropology* article advocating for a cognitive interpretation of divination (Matthews, 2022), prominent social anthropologist Holbraad sharply criticized the idea, stating: "if divination is indeed best understood as a technique for gaining information about the world . . . it is an astonishingly bad one . . . [therefore] taking diviners as putative providers of accurate information is plainly wrong."[3] Note that the rejection of the cognitive approach is also partly ideological: Because divination (and magic in general) does not achieve the ends it purports to achieve based on current scientific understanding of the world, to interpret such practices as genuine attempts at gaining accurate information or exerting influences on worldly events would mean that the indigenous people are mistaken, and in doing so the anthropologist would be implicitly accusing them of irrationality.[4]

[3] This argument is invalid because people everywhere can occasionally have norms and practices that are sub-optimal, often as a result of cultural transmission (Richerson & Boyd, 2005).

[4] Horton (1968) offers a similar argument for anthropologists in treating indigenous religious beliefs as explanation of this-worldly events (Horton himself considers this argument as mistaken): "Neo-Tylorians who take traditional beliefs at their face value therefore subscribe to the stereotype of the 'ignorant savage' and are illiberal racists. If on the other hand we treat them as having intentions which, despite appearances, are quite other than explanatory, we no longer have

While sociocultural anthropologists today have largely abandoned the cognitive approach, some researchers in psychology have taken an interest in seemingly irrational human beliefs and behaviors. Most psychological research in this area does not specifically target divination but focuses more broadly on the psychological mechanisms underpinning superstitions. In his much celebrated book *Believing in Magic: The Psychology of Superstition*, psychologist Stuart Vyse (1997) offers a comprehensive analysis of various types of superstitions in contemporary, modern societies. He posits that superstitions are the natural result of several well-understood psychological processes, including our sensitivity to coincidence, a penchant for developing rituals to fill time, our efforts to cope with uncertainty, the need for control, etc. This body of work builds upon decades of research on motivational and cognitive processes, most notably Kahneman and Tversky's work on cognitive biases and heuristics (Kahneman & Tversky, 1972, 1973; Tversky & Kahneman, 1973, 1974). For example, Vyse uses the availability heuristic to explain why people would consult an astrologer, numerologist, tarot-card reader, or psychic in the hope of finding out what their futures hold because of our frequent exposure to such practices in movies, television, and popular literature where their predictions were presented as genuinely accurate (Vyse, 1997, p. 241). Essentially, the pervasive presence of these cultural practices makes them readily accessible, skewing our perceptions towards believing in their efficacy. While biases and heuristics often provide important benefits – such as enabling swift, cost-efficient decision-making – they may occasionally lead us astray.

Other psychologists have adopted a more explicit evolutionary perspective. Rozin and colleagues (Nemeroff & Rozin, 2000; Rozin & Nemeroff, 1990, 2012a, 2012b) conducted a series of experimental studies that point to the adaptive benefits of sympathetic magical thinking. Their work suggests that the psychological mechanisms driving such thinking may have evolved because they offered significant survival and reproductive advantages to our ancestors. For instance, the aversion to objects that have been in contact with contaminants (what Frazer termed "contagious magic") could help avoid exposure to contagious microbes (Rozin & Nemeroff, 1990). More formally, evolutionary theorists have modeled the conditions under which superstitious behaviors may evolve, proposing that natural selection could favor strategies that lead to frequent errors in assessing causality between events as long as the occasional correct response carries a large fitness benefit (Foster & Kokko, 2009).

to evaluate traditional beliefs in the light of the canons of adequacy current in the sciences. Anthropologists who take this line are therefore not committed to the 'ignorant savage' stereotype. They are good liberals."

A related line of research, often associated with cognitive and evolutionary anthropology, explores how the forms of cultural practices contribute to their popularity and longevity within human populations. This body of work suggests that practices aligning with our evolved intuitions about the world are more likely to be favored over those that contradict them. According to this perspective, beliefs and practices persist in societies not only because they are true and effective – they often aren't – but more importantly because they *appear* to be true and effective. Singh (2022) refers to this as the "subjective selection" of culture, emphasizing the significance of our *subjective* assessment of cultural practices' utility, particularly actions aimed at achieving specific outcomes. An example often cited to illustrate this concept is bloodletting. This practice, which involves the extraction of blood to heal a patient, was a widespread and popular medical treatment both in the West and around the world for centuries (Kerridge & Lowe, 1995). However, we now understand that this practice generally did little to benefit the patient and, more often than not, was actually detrimental (Wootton, 2007). The question arises: What contributed to its recurrence and sustained its popularity for so long? Miton et al. (2015) suggest that there are cognitive mechanisms that predispose us to find the concept of bloodletting attractive. Specifically, humans have a strong intuition that good and bad things would go in and out of our body affecting health (Carey, 1985; Keil et al., 1999), which makes the idea that something bad coming out of the body would help illness recovery a plausible one. In a similar vein, Boyer (2020) argues that the success of many divination practices can be attributed to their "ostensive detachment," meaning that the methods used to obtain the verdict appear impartial and not influenced by the diviner's intentions or interests, thereby granting these practices more credibility than other sources of information whose content may be strategically manipulated by interested parties.

From these examples we can easily see how divination as a form of magic or superstition can be, and has been interpreted in cognitive terms. In general, cognitive approaches aim to address the puzzle of why we perceive causality where none exists (coincidentally, this was the question that early anthropologists like Tylor and Frazer sought to answer). Specifically, in the context of divination articulated in causal terms, the central question becomes: Why do humans believe that certain methods, protocols, or tools can "cause" the revelation of true and accurate information? It is important to note that cognitive theories of divination do not devalue other perspectives. Rather, as will be discussed in Section 4, the cognitive approach emphasizes the primacy of cognition in order to better understand the various functional aspects of divination.

The rest of this Element is organized as follows. I begin by exploring the various proposed definitions of divination and providing a working definition of divination that both respects its common usage and, as much as possible, maintains its theoretical coherence (Section 2). I then present a non-exhaustive survey of the existing theories of divination (Section 3) and lay out a detailed argument for the primacy of cognition in understanding divinatory practices (Section 4). Next, I examine the interplay between individual cognition and societal processes in reinforcing the credibility of divination in human populations (Section 5). Finally, I summarize the main points of the Element and highlight a few open questions that may merit future studies (Section 6).

2 Divination: The Thorny Definitional Issue

Social scientists do not always start their scholarly examinations of some subject by defining it (Swedberg, 2020). This is not because definitions are unimportant; rather it is often because offering a clear, useful, and comprehensive definition is difficult (Sørensen & Petersen, 2021). Such difficulty arises not only from the tension between the commonsense, folk understanding of a concept and its more technical, academic usage but also from the fact researchers across different disciplines often ascribe rather different meanings to the same term. Some notorious examples relevant to our discussion here include "religion" (Ferré, 1970; Guthrie, 1980; Horton, 1960; Jong, 2015), "ritual" (Goody, 1961; Snoek, 2006), and magic (Bremmer, 1999; Wax & Wax, 1963). Religion, for example, has been variously defined as the belief in spiritual beings (Tylor, 1871), systems to obtain welfare and avert misfortune (Hewitt, 1902), beliefs and practices that unite people into a single moral community (Durkheim, 1915), and anthropomorphism (Guthrie, 1980), among others. To date, no scholarly consensus has been reached on a single definition. Partly as a result, efforts to analytically distinguish religion from other cultural practices such as magic (Frazer, 1890; Thomas, 2003) have not been successful, leading to the adoption of the compromise term "magico-religious."

So why bother with a definition at all? Indeed, there have always been suggestions to dispense with overarching concepts such as "religion" (Jong, 2015; Nadel, 1954), and it is perhaps better to understand religion as a polythetic term denoting such diverse phenomena that they cannot be situated under a single explanatory theory (Boyer, 1994; Nordin, 2023). While I fully acknowledge the difficulties in coming up with coherent definitions for complex human cultural phenomena that would satisfy everyone, the cost of abandoning the definitional effort altogether seems too great.

In a discussion of the necessity of defining religion in anthropology, Horton (1960) gives two reasons for the importance of definitions. First, for many nonanthropologists the term "religion" carries a clear connotation and anthropologists have the duty to engage with and theorize such folk understandings.[5] More crucially, however, he asserts:

> To go ahead with the comparative study of religion while leaving the scope of the term undefined is to behave in a self-stultifying way, for until some fairly precise criteria of inclusion of phenomena in the denotation of "religion" have been given, it is impossible to specify those variables whose behavior we have to try to explain in our study.

While Horton's comments specifically target the "comparative study of religion," his argument extends broadly to social scientific research. Without shared definitions, scholars are left without a common ground, leading to fragmented and possibly contradictory findings and making incremental progress difficult. Lacking a definition for a general concept X precludes the development of a general theory, as it remains unclear whether a specific variable x could be applied or tested against the theory. Additionally, without a clear definition, measuring X becomes impractical, as it is impossible to determine whether x qualifies as X, and precise measurement has become key in nearly all empirical scientific endeavors (Hand, 2004; Muller, 2018).

Fortunately, our discussion here is not about religion. Nonetheless, as I will show, defining "divination" proves to be similarly challenging. Like religion, a thorough discussion of definition is important because 1) both scholars and lay people have (sometimes strong) intuitions of what divination means, 2) marking the boundaries of what does and does not count as divination affects how we theorize the psychological/cognitive factors and social mechanisms that contribute to the rise and persistence of divinatory practices, and 3) a clear definition of divination can help us understand different theories of divination and why scholars sometimes talk past each other. Let's begin by examining some standard dictionary definitions:

> The action or practice of divining; the foretelling of future events or discovery of what is hidden or obscure by supernatural or magical means; soothsaying, augury, prophecy. (Oxford English Dictionary)

[5] One could make similar arguments for the need to communicate with other disciplines in academia. As Sørensen and Petersen (2021) suggests, "disciplines that abandon too many of their once cherished categories … risk being disconnected from the wider metabolism of the scientific community, as neighboring disciplines cannot always be bothered to invest huge amount of energy to redefine or replace categories."

> The art or practice that seeks to foresee or foretell future events or discover hidden knowledge usually by the interpretation of omens or by the aid of supernatural powers (Merriam-Webster Dictionary)

These definitions are largely in line with those found in scholarly writings when the subject matter is explicitly defined. For example, divination has been defined as "the foretelling of future events or discovery of what is hidden or obscure by supernatural or magical means" (Fiskesjo, 2001), "a way of exploring the unknown in order to elicit answers to questions beyond the range of ordinary human understanding" (Tedlock, 2001), or practices "to discover what is hidden by 'supernatural' or irrational means, to see things through 'magical' insight" (Karcher, 1998). One can easily see that the common theme of these definitions is that divination is an information-generating practice characterized as "supernatural," "magical," or "beyond ordinary," with the implicit assumption that readers are already familiar with these qualifying adjectives. These terms serve to categorize information-generating practices[6] into two distinct types: the natural and ordinary versus the supernatural and extraordinary. This categorization leads to the immediate follow-up question: What exactly do "supernatural," "magical," and "beyond ordinary" mean? Addressing this proves to be a complex task.

To address these definitional challenges, I propose a typology of divination with two categories: a "narrow sense," referring specifically to systematic rituals that interpret signs or patterns believed to involve some form of divine agency, and a "broad sense," encompassing any cultural practice for obtaining information that appears implausible by contemporary scientific standards. This distinction accommodates the wide variability of practices termed "divination" across cultures while maintaining analytical clarity. The following discussion will explore how these definitions emerge from the considerations outlined in this section and why they are analytically superior to other definitions for framing divination within a cognitive framework.

2.1 "Supernatural" as a Qualifier

Let us begin by revisiting traditional attempts to define divination through its non-ordinary nature. Taking "supernatural" as an example (with other qualifiers following a similar logic), we immediately encounter the question of whether to define it emically (from an insider's perspective) or etically (from an outsider's perspective). Mainstream anthropological thinking often privileges the emic approach of adopting the native's point of view, but this approach is problematic with the concept of the "supernatural" because it likely does not exist in many

[6] Similar problem arises when defining magic; see Wax and Wax (1963).