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Plato on Natural Kinds: The Promethean Method of the *Philebus*

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Abstract: Plato's invention of the metaphor of carving the world by the joints (Phaedrus 265d–66c) gives him a privileged place in the history of natural kind theory in philosophy and science; he is often understood to present a paradigmatic but antiquated view of natural kinds as possessing eternal, immutable, necessary essences. Yet, I highlight that, as a point of distinction from contemporary views about natural kinds, Plato subscribes to an intelligent-design, teleological framework, in which the natural world is the product of craft and, as a result, is structured such that it is good for it to be that way. In Plato's *Philebus*, the character Socrates introduces a method of inquiry whose articulation of natural kinds enables it to confer expert knowledge, such as literacy. My paper contributes to an understanding of Plato's view of natural kinds by interpreting this method in light of Plato's teleological conception of nature. I argue that a human inquirer who uses the method identifies kinds with relational essences within a system causally related to the production of some unique craft-object, such as writing. As a result, I recast Plato's place in the history of philosophy, including Plato's view of the relation between the kinds according to the natural and social sciences. Whereas some are inclined to separate natural from social kinds, Plato holds the unique view that all naturalness is a social feature of kinds reflecting the role of intelligent agency.

Keywords: method of division, natural kinds, *Philebus*, Plato

1 Introduction

In Plato's *Philebus*, Socrates introduces a method of inquiry that allows humans to create traditions of expert knowledge in society. 'It is a gift from gods to people', Socrates says, 'hurled down by some Prometheus along with a most dazzling fire' (*Phil.* 16c5–7), and 'responsible for every discovery in every craft whatsoever' (16c2–3).¹

¹ All translations are my own unless otherwise noted.

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I will call this method the ‘Promethean method’ after its origin and social function as the source of craft knowledge,² although it also goes by ‘the divine method’, ‘the god-given way’, and similar variations in the scholarly literature. While I will characterize it in more detail below, the basic idea is to count sub-kinds of a superordinate kind in a certain way. For example, Socrates describes the letters of the alphabet as sub-kinds of spoken sound that one can come to learn through using the Promethean method. The point of engaging in such a practice is to learn the schematics of sub-kinds, such as an alphabet, that serve as the basis for some expert knowledge, such as literacy.

In this paper, I defend an interpretation of how the Promethean method articulates *natural kinds*. There are different ways to understand the definition of a kind, but intuitively, a kind is a set of individuals that share some common property; kinds are often relevant in the context of some classification.³ For example, individual Volvos belong to the kinds, *Volvo*, *passenger vehicle*, and *metal object*. A kind is ‘natural’ when it ‘carves the world by its natural joints’, which I interpret to mean, when it plays some important explanatory role in determining the way the world is independently of human interpretation of it, thereby gaining a privileged metaphysical status and constituting a goal of scientific inquiry.⁴ Philosophers of science debate what it means for a kind to be natural, but they are often guided by actual natural sciences: paradigmatic natural kinds are zoological species, chemical elements, and sub-atomic particles.

I defend two key claims relating to Plato and natural kinds. First, the definition of a natural kind is a subject of debate in contemporary literature, with several

² In Greek mythology, Prometheus was seen as an important source of technical knowledge allowing for the complex structure of human society, represented by his infamous theft of fire from Zeus and gift of that fire to human beings. See Thomas (2006) for more discussion. Cf. Plato’s myths of human origins at *Plt.* 274b5–d9 and *Prot.* 321c–322d.

³ For example, Khalidi (2013: 1) explains kinds thus: ‘We are a classifying species. We recognize not just individuals but kinds of things, and we sort individuals into kinds ... These include kinds of entity or object, process or state, and so on.’

⁴ For example, Khalidi (2013: 1), frames the issue of natural kinds thus: ‘In the face of such a proliferation of kinds, philosophers are prone to ask whether all of them are on a par, or whether some are real and others merely ersatz, artificial, or nominal ... Many, if not most, are simply convenient groupings, with limited utility for some purpose or another, but without a claim to “carving nature at its joints”’ (See also Hacking (1991), who asks which ‘common nouns’ refer to ‘natural kinds’). More elaborately, Haslanger (2014: 129) explains: ‘First, metaphysically, natural kinds are “mind-independent” and they constitute “the world’s joints.”’ Second, epistemologically, good explanation depends on tracking natural kinds. Because natural kinds are responsible for the structure and behavior of the world, our explanations of how the world works can only be adequate if they capture this structure.’

philosophers of science staking out incompatible positions.⁵ In the context of defining natural kinds, Plato is sometimes accused of holding the antiquated position that a kind is natural just because it possesses a mysterious ‘essence’, thereby grafting inappropriate metaphysical entities onto the natural world.⁶ Moreover, some scholars oppose a *natural* kind to a *socially-constructed* kind, by contrasting the independent existence of natural kinds with those that arise due to human activity.⁷ As a result, Plato might plausibly be associated with those who make a hard distinction between natural and socially-constructed kinds, on the grounds that socially-constructed kinds lack essences. Alternatively, and more damning for Plato, his position might plausibly be associated with the problematic *naturalizing* of socially-constructed kinds as if they had essences, e.g., the belief that racial hierarchy is grounded in biologically real essences.⁸

This impression of Plato and his place in the history of philosophy and science, I argue, relies on an impoverished understanding of his conception of natural kinds. Using the *Philebus*’ discussion of the Promethen method as my central text, I argue that Plato develops a nuanced conception of natural kinds that draws on his ideas about the connection between craft, nature, and society.⁹ I maintain that according to the Promethean method, kinds are natural when and because they are *intelligently designed division-schemes* that represent the underlying causal relations involved in the production of the craft-object to which they are connected. For instance,

5 See, for example, Boyd (1999), Devitt (2008, 2020), Hempel (1965: 146–7), Khalidi (2013), Spencer (2014), and Wilson et al. (2007).

6 See Devitt (2008, 2020), who defends traditional biological essentialism against this and other objections; Boyd (1999) and Wilson et al. (2007) offer critical alternatives. The evolutionary biologist Ernest Mayr claimed that Plato was a ‘disaster’ for ‘biology’ given his backwards views about essences in nature, i.e., the traditional metaphysical view (see Powers 2013: 714).

7 A central example is Hacking (1991), who maintains that there is a sharp distinction between natural and ‘human’ kinds; see Cooper (2004) and Haslanger (2014) for criticism. Haslanger (1995, 2015), Khalidi (2013: chapter 4), and Spencer (2015, 2014) develop positions according to which social and natural kinds are not fundamentally distinct, in response to the common view that separates them.

8 Gould (1978), Menand (2001: 101–112), and Spencer (2014: 1036) claims to defend biological racial realism partly to obstruct ‘individuals [who] wish to make claims about one race being superior to another in some respect’. Cf. the criticism of ideas about a supposed “state of nature” in social contract theory by Mills (1997). Similar examples of problematic naturalizing can be found, for instance, regarding sexuality and gender (see Corvino 2013: 77–97; Mercer 2018). Haslanger (2015: 129) also refers to natural kind theory’s ‘complicated history full of controversies and confusions’.

9 One important dis-analogy between contemporary debates and Plato’s view of natural kinds is that Plato is, in the contexts examined in this paper, primarily concerned with naturalness as a feature *among* kinds, in particular, as a relation among sub-kinds of a single superordinate kind; by contrast, most contemporary debates concern a kind in relation to particulars.

alphabets and musical notations coordinate the causal profiles of different kinds of *vocalization* and *pitched sound*, thereby providing experts with the ability to combine different kinds to write speeches or compose songs.¹⁰

A central part of my thesis is that this teleological view of the kinds relevant to crafts reflects Plato's broader conception of the natural world: because the natural world (e.g., species and elements) is the product of *craft* (τέχνη), through the agency of *craftsmen* (δημιουργοί) and their capacity for *intelligence* (νοῦς), the world is such that it is good for it to be that way, since it is designed to satisfy the good ends of its divine crafters as far as possible (*Phd.* 97c–98b, *Ti.* 28b–30c, 41a–42e, *Phil.* 26e–27c, 28c–30e).¹¹ Similarly, I maintain that a practitioner of the Promethean method learns how to organize the 'raw material' of their craft, like sound, in the ways that are best for supporting human life, by coordinating the material into a system of discrete kinds that are causally related to the craft-object of the expertise. In this sense, each division-scheme is relative to the craft-object, and is indirectly relative to what benefits human beings as a whole.

As a result, I suggest that Plato holds neither the antiquated view of natural kinds according to which they are merely the kinds possessing essences, nor the view that natural and social kinds are fundamentally distinct. Rather, Plato understands the essences of natural kinds to be posterior to, and determined by, more fundamental intelligent agents; nature's joints are determined by the *purposes* of agents in their capacity as intelligent creatures, as well as by the relations between joints within each domain-specific system.¹² Moreover, the purposes of intelligent agents always contribute to what benefits humans as a whole, because humans are intelligent creatures, and practicing intelligently designed activities (like writing and reading, performing or listening to music) expresses their capacity for intelligence and

¹⁰ This 'ingredient' model of Promethean intermediaries is articulated in Delcomminette (2006), Harte (2002), Moravcsik (1979), and Thomas (2006). However, I claim that there are two different, but related, ingredient-laden structures at issue: (1) the system discovered by the Promethean method, and (2) the composition of the craft product whose existence the discovered system enables. For instance, the method transforms *pitched sound* into the system of *notes, intervals, and scales* that can then be used by a musician in the production of the *musical harmonies* (17c11–d7). The closest position articulated in the literature is Delcomminette (2006: 137–141): Promethean kinds are the 'precondition' for the combination of sounds in musical harmonies and dancing rhythms (137–141).

¹¹ The specific Greek terms provided for each concept above are not exact; Plato uses many related terms within his intelligent-design teleology. See especially Menn (1995), as well as Broadie (2012), Lennox (2001), Johansen (2004), and Mueller (1998) on what Lennox describes as Plato's 'unnatural teleology'.

¹² In this respect, Plato disagrees with some contemporary defenders of natural kind essentialism, e.g., Devit (2008, 2020), who argues that biological essences are non-relational. Cf. Haslanger (2015).

contributes to their own internal rational order, in addition to having instrumental social benefits.¹³ The general direction of my account is to emphasize the depth of Plato's commitment to the role of intelligence in structuring both the natural and social world.

One of the more radical consequences of my interpretation is that, on my account, Plato's view is that *all natural kinds are socially constructed*, in the sense that they are natural because they reflect the intelligence of the agents that identify them.¹⁴ Indeed, the *kind* of activity in which the gods engage is, on this account, not fundamentally different from the kind of activity in which humans engage in order to structure their world. Yet, there is a distinction between divine agents producing the kinds in the natural world, and human agents producing the kinds in the human world vis-à-vis the crafts, which corresponds roughly to the traditional division between natural and social kinds. Moreover, there is a further distinction between different kinds of intelligent agents corresponding to the different crafts. For instance, *sound* can be both essentially the system of *music* and the system of *writing*, insofar as sound has multiple determinable aspects of differentiation (e.g., pitch, voice). In this sense, while Plato attributes essences to social kinds, he is committed to a pluralism about the essences of individual kinds as a result of his social constructionist view and his connection of naturalness to intelligent purposes and values.¹⁵

13 For example, craft division-schemes are part of the social coordination needed for political society, as I discuss more below. Cf. *Plt.* 274b–e: humans acquired ‘fire from Prometheus, crafts from Hephaestus and his fellow craftworker, seeds and plants from others. Everything that has helped to establish human life has come about from these things ... they had to live their lives through their own resources and take care for themselves, just like the cosmos as a whole, which we imitate and follow for all time’ (tr. Rowe).

14 While the naturalness of kinds reflects their independent causal profiles, the actual natural kinds result from organizing these profiles into a system that produces some good (e.g., different human body parts, because of their causal capacities, are organized to contribute in different ways to the rational rule of the human soul; in a similar way, letters are causal kinds of oral sound organized to contribute in different ways to written speech). In my view, Plato explains the unity of the natural and the social by maintaining that there is a perfect overlap between theoretical and practical reason: how the world is by nature is exactly how it is structured by intelligent agency. This is consistent, for example, with Haslanger's (1995: 97) definition of ‘generic social constructionism’, as well as more specific forms, such as ‘causal constructionism’ (98).

15 Nonetheless, I do not endorse or recommend Plato's view. For instance, the version of social constructionism I attribute to Plato fails to provide the historical contextualization characteristic of many contemporary conceptions of social kinds (e.g., Haslanger 2015; cf. Taylor 2020). Still, I think it is worth examining Plato's version of social constructionism about natural kinds in order to gain greater clarity on how Plato develops ideologies that naturalize social structures in the way critiqued, for instance, in Mills (1997) and Mercer (2018). I hope to show that Plato defends a poorly understood view of natural and social kinds that agrees with modern social constructionism in some respects, while diverging in other ways—this is compatible with thinking that his brand of

In addition re-casting Plato's place in the history of philosophy in this way, I will also defend an interpretation of the Promethean method of the *Philebus* against alternatives presented in the scholarship on Plato's method.¹⁶ In particular, some scholars distinguish the Promethean method from the method of 'collecting and dividing kinds' as described in Plato's *Sophist*, *Statesman*, and *Phaedrus*, insofar as they see the Promethean method as a special method pertaining to craft.¹⁷ I argue that the Promethean method is an application of the method of collection and division to teleological inquiry. In this way, the method is *both* an example of collection and division of kinds *and* a method pertaining to the crafts.

2 Promethean Natural Kinds

My central claim regarding Plato's method is that, through the Promethean method, Plato establishes a crucial continuity between human kinds, like the components of crafts, and his intelligent-design or teleological account of the natural world. On the one hand, Socrates establishes the special social function of the method as the source of all craft discoveries (16c2–3). It is part of an ancient 'tale' handed down from ancient forebearers (16c5–10) that the gods delivered this method of inquiry to human beings in order for them 'to inquire and learn and teach each other' (16e3–4). Later on, Socrates provides two examples of using the method to count one form (μίαν ἰδέαν) at a time, until one grasps whatever 'number' there are (16c10–d7): identifying sound as 'one thing going through the mouth' in the case of literacy, and identifying sound as 'one form' in the case of music.¹⁸ Students become literate through counting the many forms of oral sound that constitute letters (17a8–b9), and become musical through counting all of the many forms of pitched sound that constitute the musical notes, intervals, and

social constructionism is problematically ideological. For more discussion of Plato's views on socially constructed kinds like race and social class, see Zack (2018: 3–6) and Kamtekar (2002).

16 Cf. Barker (1996), Delcomminette (2006), Miller (1990), Meinwald (1998), and Thomas (2006).

17 Gosling (1975), Harte (2002: 177–211), Moravcsik (1979), and Frede (1997).

18 Although 'sound' (φωνή) is the single form Socrates counts first both times, in the first case, sound is 'one going through the mouth' (17b3–4), while in the second, sound is 'one in the musical art', in which 'high and low' and 'equal' are second and third forms (17c1–5) (These latter are defective instances of counting, which I do not have space to examine here; see Delcomminette 2006: 136–8). To make sense of this, Gill (2010b: 105–7) argues that sound is a genus with two determinable axes of difference, *vocalization* and *pitch*. Gosling (1975: 170–1), Thomas (2006: 223), and Harte (2002: 207–8) similarly emphasize that there are different ways of counting the intermediaries of the same form that are specific to different crafts.

scales (17b11–d3) and their accompanying dancing rhythms (17d3–7). In any use of the method, the core epistemic content, which confers expertise, is knowledge of the ‘intermediaries’ (τὰ ... μέσσα, 16d7, cf. 17b7, 17c11). The intermediaries are the ‘many’ sub-kinds that Socrates describes as ‘in between’ the ‘one’ and the ‘unlimited’. For example, the specific letters that serve as the elements of literacy are ‘intermediaries’. One cannot become ‘wise’ or ‘well-reputed’ without knowing these (17b6–9, c7–e6), which ‘distinguishes engaging in dialectical and eristical discourse with each other’ (17a3–5).

Nonetheless, the method also purports to identify the *natural divisions* among and between forms such that one has knowledge of how they are structured as natural superordinate kinds containing distinct natural sub-kinds. The foundational assumption of the method is that ‘the things always said to be are made of one and many and have in them *by nature* [σύμφυτον] limit and unlimited’ (16c9–10).¹⁹ Moreover, Socrates describes the method as a means of knowing that resolves the ‘natural’ paradox ‘by nature’ (14c7–9), namely, that ‘the many are one and the one many’.²⁰ He compares this paradox to a person ‘having divided an [animal’s] limbs and at the same time its parts, and having secured agreement that it is one’, then mockingly declaring that ‘the one is many and unlimited, and the many are one only’ (14d8–e4). As I develop in more detail below, this analogy to the naturalness of animal bodies and their parts is essential to understanding the structure of Promethean kinds. Although there is some dis-analogy in the *construction* of the animal bodies in Plato’s natural science and the *discovery* of the knowledge of crafts

19 Controversially, Gosling (1975: 173) and Reshotko (2010), take ‘always’ to modify ‘said’, such that the referents of the line are the things always spoken of, which may not be eternal and imperishable forms. Dancy (2007: 56–60), Hackforth (1958), Moravcsik (1979: 89), and Striker (1970: 17–23), take ‘always’ to modify ‘to be’, such that the referents of the line are always existing things, i.e., forms. One motivation for the first reading is that the objects that have limit and unlimited in them are, according to the fourfold division, mixtures that *come into being*, rather than imperishable forms (Dancy 2007; Reshotko 2010). However, Socrates uses similar language to describe the source of the controversy from the natural paradox: ‘we say that the same thing coming to be one and many through discourse flits around everywhere *in the case of each of the things always said* [καθ’ ἕκαστον τῶν λεγομένων ἀεί]’ (15d4–6). These objects are imperishable unities like human, ox, the beautiful, and the good, which means that by ‘the things always said to be’, he must have in mind things that do not come to be or perish (which may be why they are always in our discourse). For example, while we observe the letters and musical notes as the particular forms of speech/writing and music familiar in human culture, this is because eternal, unchanging forms immanently structure the universe—according to the Timaeus, the ‘harmony’ of the universe is present in the ‘harmony’ of music (*Ti.* 47c–e, cf. *Phlb.* 51d, 56a, and the microcosm-macrocosm parallel, 29b–30c).

20 That the Promethean method is an epistemic solution to this paradox is clear at 16b–c, where Socrates tells Protarchus that they must follow the path he has ‘always admired’ and that is especially ‘fine’, in response to the difficulties posed by the paradox.

described here, I propose that in each case, intelligent agents identify the natural kinds by determining how the causal capacities of a world that already exists can be coordinated in a way that achieve ends supporting rational life.

An important component of my case for a teleological interpretation of Promethean natural kinds is Socrates' account of a parallel to this 'top-down' use of the method, which begins with one general form and involves learning an *established* expertise, namely, how pioneers of crafts use the method to *create* expertise. Unlike those in the description above, these practitioners use the method to go 'from the unlimited to the one' rather than 'from the one to the unlimited'. In other words, they start with what does not appear to be a unified domain of knowledge and find ways to organize the domain into an expertise. For example, the pioneer of written literacy, the Egyptian Theuth, uses the method to identify the letters within unlimited sound (18b6–d2).²¹ According to Socrates, Theuth discovers literacy by first noticing that vowels, 'those that sound' (τὰ φωνήεντα), are 'many' forms within 'unlimited sound' (18b6–c3). He then observes that there is a separate form, those that 'do not have sound, but make some noise' (ἕτερα φωνῆς μὲν οὐ, φθόγγου δὲ μετέχοντά τινος), and yet another form called 'mute' or 'unsounding' (ἄφωνα).²² Theuth then divides each of these three discovered forms 'up to each one' (διήρει . . . μέχρι ἑνὸς ἐκάστου), until he grasps the 'number' of them (18c3–6). Finally, he realizes that 'none of us can learn one alone by itself without all the rest', and assesses that 'this bond, being one, makes all these also somehow one', such that he declares 'the art of literacy as one set over them' (18c7–d2). This discovery of how we are able to learn the letters corresponds to Socrates' generalized description of the Promethean method as a way of learning and teaching each other (16e4), so that the example of Theuth provides insight into what enables this learning and teaching.

I claim that the correct interpretation of Theuth's pioneering is teleological, in the following sense. Theuth collects and divides sound into a system of functionally related forms that play different roles in contributing to *written communication* as a whole—experts in this domain (the literate) use the different kinds to produce writing and reading. What allows him to coordinate this familiar system is looking to

²¹ I follow the tentative consensus in the literature that Theuth begins with 'unlimited' sound in the sense of utterly different kinds of speech along an unbounded spectrum of sound-quality, rather than infinite token phonemes. That is, each sound is a new (even slightly) *kind* of sound, on this initial conception. See Delcomminette (2006: 117, 125–153), Gosling (1975:86, 170–1), Meinwald (1998: 170–1), Menn (1998: 294), Moravcsik (1979: 88–93), Harte (2002: 206), Henry (2011: 245), and Kahn (2010: 62–3).

²² Gill (2012: 221–222) claims that the middle group consists in iota and upsilon, the liquids (lambda and rho) and nasals (mu, nu, and gamma-nasal), and sigma, which roughly corresponds to the division between voiced and voiceless in Smyth's (1956: section 22) table of consonants.

the different kinds in *oral communication*, which are differentiated by their causal features.²³ The vowels, semi-mutes, and mutes are described as those that ‘sound’, those that ‘do not sound, but make some noise’, and those that we call ‘unsounding’. The lack of stricture on the vocal cord, for instance, is a distinguishing mark of vowels, which is plausibly why Socrates describes them as those that ‘sound’.²⁴ Voice, mouth closure, the positions of the tongue and teeth, and so on, physically account for the difference between sounds in oral speech. Indeed, in the *Theaetetus*, the dialogue’s namesake claims that sigma is one of the ‘unsounding, but is some noise only, such as hissing of the tongue’, while beta and most letters have ‘neither sound nor noise’, and the ‘seven clearest’ have ‘sound only’ (*Theat.* 203b2–8). Being responsible for the understanding of the alphabet that Theaetetus expresses as a literate Greek, I claim that Theuth identifies the different qualities of oral sound insofar as they have different causal profiles.²⁵ He transcribes the different kinds into a system of written figures that provide information about to what *uses* the different causal powers in our constitution can be put—from one set (oral production of language) to another (writing and reading language).²⁶ Generalized to all craft, I suggest that this is part of the essence of a ‘Promethean’ natural kind: the

23 In my view, what I am calling the ‘causal feature’ of a given letter corresponds to what is involved in *producing* that sound, which then serves as the basis for coordination with other letters in the production of speech. In this sense, according to the Aristotelian taxonomy of causes, the causal features of speech are individuated by their efficient (productive) profiles, which in turn provides material causal profiles, i.e., the efficient causal profiles serve as the basis for expert manipulation into a craft-object. Compare the discussion of ‘auxiliary causes’ in the *Timaeus* (e.g., 45b–47a) and *Phaedo* (98c–99d), and the division of ‘cooperative arts’ in the *Statesman* (280e–283a), discussed in Section 4 below.

24 It is plausible that this reflects a broader view of underlying causal processes as the *sources* of the differentiating qualities in a division-scheme. For example, later in the *Philebus*, Socrates puts the division of pleasure into true and false in terms of pleasures taking on different qualities, just as judgements take on different qualities (37b10–c10). Yet, the *source* of these different qualities are the causal processes of restoration and/or destruction that gives rise to pleasure or pain (for instance, falsely appearing mixed pleasures have distinctive underlying causal processes); a similar point is made early on, when Protarchus denies that pleasures are different in anything other than their sources (12d7–e2). In this way, I suggest, Plato understands the division of sound based on different kinds of sound-quality in terms of the causal sources of those qualities.

25 Why would Theuth know to do this in the first place? I don’t think Socrates offers answer here; instead, it is plausible that Theuth’s semi-divine nature explains his special insights (his ability to ‘discern’, *κατανοέω*), for which we are offered no account. On the persistence of brute insight in the method of collection and division, see Henry (2011).

26 It seems plausible that part of the heroic feat Socrates attributes to Theuth (‘some god or divine man’, 18b6–7) is seeing how oral sound has a structure that can be transcribed with figures corresponding to different parts, such that the figures can be used to convey some of the same meanings.

coordination of causally distinct kinds in relation to a craft-object. In this way, the Promethean method involves the intelligent coordination of a material such that it is good for that material to be organized that way (e.g., vocalized sound organized into the alphabet).

Further, Theuth's discovery of the 'bond' that makes the letters 'somehow one', namely, the epistemic interdependency of learning each individual letter, speaks to the systematic nature of Promethean natural kinds. Each of the figures that Theuth transcribes corresponds to a pattern of in human speech, but that pattern's significance (i.e., the reason it constitutes a letter) is recognizable only in the context of its capacity for coordinating with other patterns of speech in order to produce components of communication: syllables, words, sentences, and so on. In other words, the significance of each letter can only be understood, from the perspective of the craft, as part of a system of causally differentiated kinds contributing to writing as a whole.²⁷ This is also an aspect of the teleological character of Promethean natural kinds: the collection of kinds constituting part of 'nature's joints' is a system to be put to use in the practice of craft.²⁸

Human beings benefit from this method, which is one reason Socrates attributes technological advancement to it. Some of these benefits are instrumental. For example, as the object of human study and instruction, the alphabet allows for the written transmission of the core epistemic content of all crafts, provides a form of socialization, and creates new forms of expression (e.g., speeches). Additionally, there are constitutive benefits of using the method. For example, collecting and dividing the letters expresses and develops humans' rational capacities for coming to understand and manipulate the world.²⁹ Similarly, learning the system of musical notes, intervals, and scales through the method provides concrete instrumental benefits (e.g., the social and cultural tradition of music, a new means of expression,

²⁷ However, one need not understand every possible combination of letters in order to make this discovery; for example, Alpha has a specific *kind* of contribution to make to any speech, which one can learn by seeing how, for instance, that contribution is similar to but different from Iota, and still more different from Beta, and so on.

²⁸ One might wonder, however, about how this is compatible with the plurality of alphabets. Gill (2012: 222) claims that Theuth's alphabet is intentionally limited in scope, focusing only on the differentiae that are relevant to Greek; similarly, Delcomminette (2006: 154) maintains that there are different ways to divide oral sound. However, I follow Menn (1998: 299), who argues that Theuth's process, even if it does not result in an actually international phonetic alphabet, is *in form* the sort of activity that results in such an alphabet.

²⁹ Cf. letter-learning as the 'model of models' in the *Statesman* (*Plt.* 277e–279a), and the idea of 'letters' of reality in the *Sophist* (*Sph.* 253a–c); see Menn (1998) for discussion.

new auditory pleasures).³⁰ It also provides constitutive benefits by expressing and developing human capacities for rationality.³¹ In each use of the method to learn or create a craft, the practitioner both learns how to produce an instrumentally beneficial good and expresses their capacity for intelligence vis-à-vis the production of that craft-object. As I describe in more detail below, I think that this kind of coordination of causal kinds resulting in human benefit as rational creatures is in-keeping with the general practice of teleological activity: given that humans are rational animals, they are able to benefit from the intelligent design of a craft system like the letters or musical notation.³² Accordingly, I suggest that the wisdom that knowledge of intermediaries confers is a power to produce human goods (cf. *Euthyd.* 278e–282c, *Prot.* 351b–357e), because each domain of intermediary forms is a system that, as a unified whole, encodes information about the production of craft-objects.³³

3 Natural Teleology and Natural Kinds

In this section I continue to make my case that Promethean natural kinds are teleological by appealing to the connections between the method and Plato's teleological natural science. The *Timaeus*, Plato's most celebrated and sophisticated attempt at natural science, presents an account of the creation of the cosmos and formation of its specific cosmological and ecological elements. It is traditionally and reasonably understood as a 'teleological' science answering to Socrates' failure in the *Phaedo* to identify natural causes of how each thing is ordered such that it is best (*Phd.* 97b–99d).³⁴ According to the account of the *Timaeus*, a divine craftsman ('the Demiurge') shapes the world as a whole into a living complex of body and soul so that it is as good as it can be (29d7–30c1). For instance, the Demiurge shapes the world-body into proportionate parts of physical elements and the world-soul into proportionate parts of the mixture of

30 Music is situated as one of the lowest forms of knowledge, but knowledge nonetheless, at *Philebus* 56a3–7.

31 For instance, cf. *Timaeus*' claim that musical harmony allows humans to harmonize their inner psychic motions (*Ti.* 80a–b).

32 In the *Statesman* and *Protagoras*, similar gifts from Prometheus confer the capacities necessary for human beings to lead productive lives in societies rather than struggle to survive in a hostile natural world (*Plt.* 274b5–d9, *Prot.* 321c–322d).

33 In this sense the 'purposes of agents' I claimed in the introduction structure natural Promethean kinds are a special class of *formalized* purposes connected to a craft as such (e.g., the production of *writing*, or *music*). Individual agents can have individual purposes that are at odds with general human benefit, but those formalized in a craft cannot, on my account.

34 For instance, see Mueller (1999) and Menn (1995).

sameness, difference, and being (35b–36b). The Demiurge then tasks the gods he creates with making the avian, aquatic, and terrestrial animals (the three remaining kinds of animals) in the same way (41a7–d3). The activities of both kinds of gods explains why it is *good* for each part of the world to be arranged the way it is, as they repeatedly go out of their way to make the world the best that it can be, given certain initial constraints often associated with materiality in some way (e.g., 29d–30c, 45b–46a, 53a–c).

Socrates offers an example of this worldview in the *Philebus*, with a division of ‘all there is now in everything’ into four categories: ‘unlimited’, ‘limit’, ‘mixture’, and ‘cause’ (23b5–27c1). According to this division, intelligence is responsible for combining the limits—which are ratios like ‘the equal and equality, and after the equal the double and whatever is as number to number or measure to measure’ (25a7–b2)—with the unlimited—which are spectra of properties, whatever ‘has the nature of taking on the more and less’, such as ‘hotter and colder’, ‘drier and wetter, more and less, faster and slower, taller and shorter’ (25c5–11)—resulting in the coming to be of mixtures such as health and music (26e–27c, 28c–30e). In this respect, intelligence is a maker, producer, and cause (27a5–6, 27b1–2), and there is a cosmic intelligence that is the source of human intelligence (29a9–30e3) and responsible for the seasons and the regular motions of the astronomical bodies (28c6–e6, 30c2–7). In other words, Socrates models the underlying structure of reality on an intelligent artisan, taking as their material an unbounded spectrum of difference (e.g., ‘hotter and colder’, ‘drier and wetter’), and imposing mathematical ratios on this material in order to produce the complex objects studied by crafts (e.g., health, music, planetary motion).

I claim that this teleological view also applies to the Promethean intermediary forms that enable human craft.³⁵ In the fourfold division passage, Socrates draws a parallel between the way that our wisdom provides medical aid and combines other things for the better, and the way that *cosmic* wisdom does ‘these same things’ in the whole cosmos for the beautiful and pure things (30a9–b7). Moreover, included among the mixtures for which intelligence is responsible are music, health, beauty, strength, and many other ‘extremely fine things in souls’ (25e7–26c2), which suggests that *human* intelligence engages in some activity that is like cosmic intelligence structuring the world as a whole (cf. *Ti.* 42b–d, 46e–47e, 90a–e). I maintain that the Promethean

³⁵ Against objections from Striker (1970) and Frede (1993, 1997), Delcomminette (2006: 201–285), Carpenter (2007), and Gill (2019) defend continuity between the fourfold division and the ontology of the Promethean method. In my view, the ‘many’ are ‘unlimited’ in the sense of having infinite differences, in contrast to having differences that are intrinsic to their unity and so limited by the content of that unity. In both the Promethean and fourfold division passages, I understand ‘unlimited’ to capture the relevant properties of the *continuum* of difference that is measured by the limits and used by the intelligent cause to produce a craft object. See Gill (2019) and Gosling (1975) for similar views.

discovery of craft knowledge is one domain of teleology within this broader intelligent-design framework, reflecting the fact that the method is a gift from the gods.

For an example of how human intelligence might engage in divine-like activity through counting kinds, consider the analogy that Socrates draws in the *Phaedrus*. Socrates uses partitioning a body into the left and right side in order to illustrate a natural division of kinds (*Phdr.* 266a1–2). This establishes a direct analogy between the natural structure of bodies and the natural structure of divided kinds. As an example of the natural structure of bodies, according to Timaeus, the created gods, faced with the necessity of imbuing humans with mortal in addition to immortal souls, place the immortal kind and the mortal kind in separate physical encasings, the head and the heart (69c–70c). They create a physical boundary between the two, the neck, as a way of making sure that they achieve their aim of letting ‘the best’ kind lead (70b8–c1). In this case, a ‘way of life’ is taken as granted: there are different kinds of soul that need to be supported in a human being, with the rational kind as the natural ruler. Given these assumptions about a certain way of life providing goals for the created gods, they are able to design the body that best supports this way of life by coordinating its parts in order to serve determinate functions (e.g., the neck is a boundary protecting the rational soul).

I maintain that Promethean inquiry follows this same teleological pattern: given a certain way of life, namely, *human life*, which is, given the nature of the cosmos as explained in the *Timaeus*, naturally a life governed by intelligence, an inquirer learns how to activate the capacities of some domain of raw material (e.g., sound, humor, wood, metal) into a system that works, overall, to support the human way of life and the goals it provides. Different Promethean systems may support different aspects of human life, but collectively they serve human flourishing, in parallel to different sub-systems within a single body.³⁶ Accordingly, the causal coordination of forms into natural kinds that I articulated in the previous section conforms to the natural structure of the cosmos as a whole, *both* (1) in that it involves coordinating causes in view of a good end, *and* (2) in that this kind of coordination supports and sustains rational life, and, indeed, is an expression of rationality.³⁷ In other words, my interpretation of Plato’s view is as the claim that there is an overlap between the systems that produce craft objects and the systems that benefit human beings, due

³⁶ For instance, the head, neck, and heart form one sub-system cooperating with the sub-system of left-and-right sides (e.g., 77c–e).

³⁷ Of course, people can have bad goals—my claim is only that the Promethean method operationalizes *certain* of those goals (the ones that express the rational aspect of human nature and our connection to the divine), which are beneficial for the reasons I describe. Cf. the division of weaving, discussed below—the ends in question are those of craft as such.

fundamentally to the fact that humans are intelligent animals and craft systems are intelligently-designed.³⁸

As I suggested above, Plato offers a direct connection between natural Promethean kinds and animal bodies in the *Philebus* itself, which supports my claim about their parallel natural structures.³⁹ Protarchus, Socrates' main interlocutor, initially mistakes the natural paradox of the one and many (the paradox prompting the Promethean method of inquiry) as the conjunction of the fact that there is 'one self, Protarchus, by nature', and the fact that there are many and opposite 'selves', because the same subject, Protarchus, is 'great and small, heavy and light, and myriad other things' (14c11–d3). Socrates unfavorably compares this to someone both 'dividing an [animal's] limbs and at the same time its parts [τὰ μέλη τε καὶ ἅμα μέρη]' and maintain that it is 'one' (14d8–e4). By contrast, the paradox to which Socrates calls attention arises when the 'one' is taken 'from the things that do not come to be or perish' (15a1–7). While Socrates creates distance between the two kinds of paradoxes, it is nonetheless plausible that abstract and imperishable versions of the solutions to the unserious paradox about perishable objects similarly diffuse the serious paradox of the imperishable one and many.⁴⁰ One of the problems Socrates raises for imperishable forms that are one and many is how the many forms can be different sub-kinds and yet, *without* coming to be or perishing, are nonetheless consistently the same one (superordinate) form (15b2–4).⁴¹ This suggests that there is some a-temporal analogue to the process of becoming that explains how many forms are one form—broadly, there are some features of *being* that explain eternal and unchanging unity and diversity in the way that there are features of *becoming* that explain perishable and mutable unity and diversity. Socrates

38 Moravcsik (1979: 93–99) discusses this idea of a normative conception of the 'natural', akin to 'appropriate'. See also the discussion of mixtures in Harte (2002) and cf. the Athenian Stranger's anti-materialist, reformative definition of 'nature' and 'natural' as what is due to the soul in *Laws* XII (*Lgs.* 889a–897a).

39 Muniz and Rudesbusch (2018) offer an interpretation of collection and division that relies heavily on the body analogy. While this paper is concerned with distinct issues, my position is in broad agreement.

40 Delcomminette (2002: 22–25), Meinwald (1996: 99–101), and Thomas (2006: n. 12) take similar positions (Meinwald (1996: 99) also observes the διαπέω at 14e1 and the διαίρεσις at 15a7). See Harte (2002: 56–60) for a similar reading of a parallel passage in the *Parmenides*. However, Thomas (2006: n. 12) maintains that both subordination of kinds (akin to limbs and parts) *and* compresence of opposite properties through the blending of kinds (akin to Protarchus being great and small) are sources of imperishable paradoxes.

41 For instance, Muniz and Rudebusch (2004). For instance, the puzzle is how the many different pleasures, such as wise and foolish, are consistently pleasures and wise or foolish without *becoming* being wise or foolish from previously being pleasures (cf. 12c6–13a5). Cf. Meinwald (1996: 100–102) and Delcomminette (2002: 34–40).

plausibly highlights dividing (διαιρέσις, 15a7) imperishable forms that are one as a mirror to dividing (διαιρέω, 14e1) the limbs and parts of animals precisely to make this point. I take this as reason to think that the natural structure of *bodies* is analogous to the natural structure of eternal kinds.

A plausible metaphysical bridge between the naturalness of bodies and the naturalness of eternal kinds, at least in the *Philebus*, is a common mathematical ontology. Following a trend in the literature on the Promethean method, I maintain that Promethean intermediary forms have numerical values that differentiate them from each other and bind them within shared forms through ratios (cf. *Rsp.* 522c1–8).⁴² The method's background ontology, in which the things always said to be have by nature 'limit and unlimited' in them, is plausibly mathematical. As we saw above, in the fourfold division, Socrates characterizes limits with the examples of 'the equal and equality, and after the equal the double and whatever is as number to number or measure to measure' (25a7–b2).⁴³ For instance, there are determinate ratios of humors in the body that constitute human health and determinate ratios of pitch that constitute the musical notes and intervals (cf. 25e7–26a4).⁴⁴ Moreover, 'unlimited' (ἄπειρος) often has the mathematical sense of an infinite number (*LSJ* A); it seems likely that Socrates is drawing on it to characterize the way that numerical measurements of a previously unmeasured material delimit the material and make it intelligible to an artisan.⁴⁵ Similarly, for instance, according to Timaeus' account of the world's body, numerical proportions 'naturally' unite the elements in the body with the 'best bond', 'one that really and truly makes a unity of itself together with the things bonded by it', since 'this in the nature of things [πέφυκεν] is best accomplished by proportions' (*Ti.* 31c, tr. Zeyl). It is not hard to see how Plato might extend this mathematical understanding of the created world to the eternal forms at work in human craft. As the Demiurge identifies the right ratios to bring out the right capacities in his material in order to make the best possible world, a Promethean inquirer identifies the right ratios to bring out the right capacities in their material in order to determine the best way human life can be supported by the material.⁴⁶ Although these

⁴² Several scholars maintain that these numbers and measures are ratios of the craft-material grounding the expertise in question. Barker (1996), Gosling (1975: 170–1), Harte (2002: 177–212), Meinwald (1998), and Thomas (2006: 217–226). For a somewhat different view, see Delcomminette (2006), especially pp. 120–121.

⁴³ Barker (1996), Gosling (1975: 170–1), and Thomas (2006: 221–226).

⁴⁴ Cf. Harte (2002: 185–191), & Barker (1996).

⁴⁵ Cf. Thomas (2006: 222), Gosling's (1975: 156–171), and Barker's (1996).

⁴⁶ Although the musical example is most straightforwardly mathematical, it is plausible that voice and other components of oral sound production serve as the determinable domain and the letters represent mathematical ratios along these spectra. A similar model can generalize to health and other craft-objects.

forms are eternal and unchanging, they manifest as perishable particulars; in this sense, the creation of systems coordinating the causal profiles of these particulars is a *discovery* of mathematically expressible, eternal, unchanging, and underlying patterns in the cosmos.

4 Collection and Division

The *Philebus* is not the only Platonic dialogue to discuss the idea of dividing kinds naturally. Socrates of the *Phaedrus* describes two powers that he claims are necessary for speaking well, namely, ‘collecting into one form things seen scattered every which way’ and ‘cutting according to forms, the number there are by nature, trying not to splinter any part, like a bad butcher’ (*Phdr.* 265d3–4, e1–3). In the *Statesman*, the Stranger from Elea claims that his account of the different kinds of expertise in the city is an example of dividing ‘according to limbs, like a sacrificial animal’, since he cannot divide kinds of expertise ‘in two’ (287b10–c5). Along with the Stranger’s admonition of Young Socrates for dividing ‘animal’ into ‘human’ and ‘beast’ (*Plt.* 262c10–263a1), these passages form the basis for detailed scholarly accounts of Plato’s conception of *natural kinds*, and in particular, the ability of this ‘method of collection and division’ to articulate natural kinds.⁴⁷ One question for my account of *Promethean* natural kinds, then, is how far-reaching it is, given that the Promethean method is often associated, and sometimes identified, with some form of collection and division.⁴⁸ I will not be able to offer an adequate account of collection and division in general in this paper. However, I will offer two ideas about how my account of the Promethean method of the *Philebus* can in principle extend to Plato’s discussions of collection and division.

First, the teleological character of Promethean natural kinds is arguably a feature of the Stranger’s second form of division, which *can* be used as a teleological form of inquiry. As I noted above, the Stranger explicitly distinguishes between division ‘in two’ (or ‘dichotomous division’) and division ‘by limbs’. My emphasis on the body analogy for understanding Promethean inquiry suggests that the Promethean method is a form of division ‘by limbs’.⁴⁹ Moreover, the

47 Core issues in the literature are: (1) what constitutes a Platonic natural kind? (2) What formal procedures does the method of collection and division offer for identifying natural kinds? See Moravcsik (1973)’s groundbreaking work, and the reply from Cohen (1973); more recently, see Gill (2012), Grams (2012), Henry (2011), Larsen (2020), Menn (1998), Muniz and Rudebusch (2018), and Wedin (1987).

48 Some scholars maintain that the Promethean method is a different method from collection and division: Gill (2010a, 2012: 214–223), Gosling (1975: 165–181), Harte (2002: 207–8), Moravcsik (1979: 87–93), Ryle (1966: 135), Thomas (2006: 217–221), and Trevaskis (1960). By contrast, see Ackrill (1997: 99–101), Miller (1990), and Henry (2011: 242–246).

49 This position is also endorsed in Gill (2012: 214–223) and Miller (1990).

Promethean method's injunction to 'count' 'however many' the 'number' is of the many intermediary forms echoes the Stranger's use of non-dichotomous division to count however many arts there are in a city and relate them to each other in terms of their different causal roles (e.g., *Plt.* 287d–291a). This is significant, since the Stranger's use of this form of division is plausibly teleological. For example, following a dichotomous division of the art of clothes-making from other forms of expertise (279c7–280a6), he divides the art of weaving from other causally related arts (its 'co-workers', *συνεργά*) within the art of clothes-making (280e7–283a8). For example, weaving is clearly distinguished from carding, which prepares the material to be woven. As a whole, this division organizes the art of clothes-making into a system of different practices that causally coordinate to produce the human good of clothing. For another example, the Stranger offers a final division-scheme of the arts in a city that is plausibly teleological. Modelled on the division of clothes-making, this division explains how different arts are in charge of, and make use of, other arts, in order to serve their own ends, with statecraft as the most superordinate expertise in charge of coordinating all the other arts in a city in order to produce a happy citizenry (304a–311c).

In this way, there is a plausible case for understanding non-dichotomous division as capable for teleological inquiry. However, this does not involve conflating dialectical division and the use of a classificatory system by a crafts-person. In the articulation of the kinds involved in weaving and in statecraft, dialectical division is used to capture the relations among sub-kinds that need to be part of the relevant craftsperson's (weaver, statesman) knowledge. This is the same way that the division of sound into the letters captures the relations among sub-kinds that need to be part of a literate person's knowledge *qua* literate. My claim is that, for this form of division, naturalness is teleological: a sub-kind is natural when and because it reflects the causal role that kind plays in producing the craft-object in question.

Second, the lessons from the Promethean method I have argued can be extended to the method of division widely also plausibly extend to what Plato calls *dialectic* in the *Phaedrus* (266b3–c1) *Sophist* (253d1–e2), and *Statesman* (285d5–7, cf. 284e11–285c2). As we have seen, Socrates also describes the Promethean knowledge of the 'intermediaries' as making the difference between 'eristic' and 'dialectical' discourse. Yet, it is unclear how dialectic relates to collection and division. While the consensus in the scholarly literature is that collection and division *in some sense* facilitates dialectical knowledge, commentators are divided over how they facilitate it.⁵⁰ Briefly, I would like to offer a general sketch of how collection and division might relate to dialectic.

⁵⁰ See Delcomminette (2006: 110–155), Menn (1998), Henry (2011), Miller (1990), and Moravcsik (1979); contrast Gill (2012), Franklin (2011), Larsen (2020), and Thomas (2006).

In my view, Plato understands collection and division as a broad and ordinary practice that we often engage in unreflectively. The Eleatic Stranger sometimes uses division-language descriptively rather than normatively to indicate a common or likely practice of dividing a certain subject a certain way (*Plt.* 262d1–2, 264e3–6, 291e1–5, 306c7–8). He famously uses an ethnographic example of how ‘the people here’ divide humankind into Greeks and barbarians, and he recommends classifying people as Lydians and Phrygians only when at a loss (262c10–263a1). The Stranger and Socrates both suggest that difficulties in making and understanding divisions arise due to the nature of our linguistic discourse (*Plt.* 261e5–7, 262d5–6, e2–3, 263d5–6, 275e4–9, 276a9–b6; *Phil.* 15d4–16a3).⁵¹ Similarly, in the *Phaedrus*, Socrates claims that collection and division grant him the ability to ‘speak and think’ (*Phdr.* 266b3–5).⁵² In this sense, ‘collection and division’ is not necessarily an epistemically virtuous method of inquiry. Rather, collection and division are *procedures* that can be virtuous when meeting certain conditions. The question is what those conditions are and whether meeting makes that collection and division dialectical, which I will not be able to settle here.

However, it is possible that the teleological mode I have attributed to the Promethean method and connected to non-dichotomous division in the *Statesman* represents one stage in the process of developing collection and division into a tool for dialectical knowledge. In the *Philebus*, Socrates develops an account of dialectic as the most precise and true form of knowledge (57e–59e), which distinguishes dialectic from natural scientific knowledge (59a). Natural science involves opinions, and studies what comes to be and perishes, while dialectic acquires unchanging knowledge of eternal and immutable things. I suggest that the use of the Promethean method to learn or create crafts like literacy falls somewhere in-between full-scale dialectic and natural science. Perhaps, for instance, the Promethean method represents dialectical inquiry into ‘immanent’ forms in the world (i.e., how *being* structures *becoming*), while stopping short of dialectical analysis of being in itself. This is consistent with Socrates’ strategy of seeking to differentiate forms of knowledge based on how precise they are, with dialectic serving as the upper limit of precision (55d–56a).⁵³ Moreover, it is consistent with the Stranger’s reflection on using division to become ‘more dialectical’ in the *Statesman* (285d), and Socrates’ claim that the Promethean method of counting makes the difference between speaking ‘dialectically’ and ‘eristically’: since one can use the method of division to be more or less dialectical or speak more or less ‘dialectically’, it is possible for the

51 For discussion of the Stranger’s task as reforming our existing practices and attitudes, see Franklin (2011) and Larsen (2020).

52 This observation is due to Larsen (2020).

53 On the ‘paradigm’ model of definition, see Carpenter 2015.

Promethean method to represent one less than perfected kind of dialectical inquiry specifically relating to expertise.⁵⁴

5 Conclusion

I would like to conclude by noting two features of the account I have attributed to Plato in the context of the history of natural kind theory. First, many scholars view the pre-Darwinian conception of natural scientific kinds as eternal ‘essences’ inhering in particular members of the kind, where each essence is a property or set of properties that is necessary and sufficient for membership in the kind. By contrast, they see the post-Darwinian conception of natural kinds as ‘populations’ united by causal mechanisms determining the survival of certain populations and the extinction of others, so that (1) members of natural kinds may fail to share properties universally and (2) those properties are contingent features of natural selection rather than necessary essences.⁵⁵ While Plato may not have anticipated contemporary theory, his position is not *simply* one of a traditional ‘essentialist’. Of course, I have focused on Plato’s conception of natural kinds according to craft, which are independent of biological natural kinds. Nonetheless, I have defended a unified Platonic conception of natural kinds across the natural and social sciences, according to which for a kind to be natural is for it to stand in a certain teleological causal position with respect to other kinds in its domain, which is determined by an intelligent agent. In this respect, all natural kinds acquire their special metaphysical and epistemic status due to their relation to intelligent design. Moreover, as a result of Plato’s views about different kind of intelligence, natural kinds are also pluralistic in the sense of there being multiple divisions of the same kind (e.g., sound as letters and as musical notes), and different levels at which natural kinds exist (e.g., fire as a divine natural kind as Alpha as a human natural kind). In this way, I aim to re-cast Plato’s place in the history of natural kind theory, by highlighting the depth of his commitment to intelligent agency as the most fundamental aspect of the world’s structure.

Second, my account emphasizes Plato’s unique understanding of natural kinds as socially constructed. By focusing on his rationalist view of human nature, and its broader representation in the universe, Plato interprets natural kinds as the product of human or human-like agency. While this view attributes essences to kinds in a way that justifies and explains social hierarchies,⁵⁶ it also directly

⁵⁴ Cf. Gill (2012: chapter 7) and Thomas (2006).

⁵⁵ See, for example, the discussion in Sober (1980).

⁵⁶ For example, my account relies on the theory of naturalness in Plato’s *Timaeus*, which constructs female biological difference (90e–91d) to affirm male superiority. Cf. Mercer (2018).

connects many social essences to human purposes and values. The natural kinds according to the crafts reflect the human effort to manipulate their world in a way that supports human life. Moreover, while Plato diminishes the traditional boundaries between natural and social kinds, my interpretation also finds a place for a division between the kinds in *nature* and the kinds in *human society*, corresponding to the division between divine and human intelligence. These features of Plato's view raise several questions about its ideological character, what (if any) merits it has, and what other lessons it might offer, which I will not pursue here.

My aim is to contribute to the growing literature on the method of collection and division, by centering the distinctively *social* nature of many of Plato's examples of collecting and dividing kinds, which is often overlooked.⁵⁷ Plato's characters collect and divide kinds of love (*Phdr.* 265d5–7, 265e3–266b1); crafts (*Sph.* 219a4–8), like farming (219a10), fishing (221c2), retailing (223d3–4), and sophistry (264d7–268d4); kinds of knowledge (*Plt.* 258b6–7), like rule or domination (258e8–259d5), communal care (276a1–277a2), constitutions (300c5–303d2), and political classes (287c11–291a4, 303e7–311c7); and (if we count the *Philebus*, as I have suggested) musical notes and rhythms (*Phil.* 17c11–e3), letters (17b6–9, 18b6–d2), and pleasures (19b2–8). The position I have defended advances our understanding on this front by demonstrating how Plato's Promethean method organizes the domains of expert human knowledge in conformity with Plato's teleological conception of the world as a whole.

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57 For some exceptions, see Lane (1998: 86–89), Kamtekar (2002: 3–5), and Miller (1980: 19–24).

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