

THE FOUNDATIONS OF CHINESE LOGIC

by

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Abstract

Chad Hansen's interpretations of Warring States (475 B.C. – 221 B.C.) Chinese logic have long dominated the field. While Hansen has had his critics, there has been a general acceptance of many of his important contributions. In addition, the development and criticism of his interpretations have generally tended to create further confusion over the key philosophical concepts in Chinese logic. Among Hansen's many contributions to the field of Chinese logic a few are foundational to the study of logic: one, that Chinese thought has no concept of truth; two, that Classical Chinese nouns are analogous to mass nouns in English; three, that, because Chinese philosophy is nominalistic, it has no role for abstract theories like essences, Platonic forms, or ideas; four, that Chinese ontology is mereological and without a concept of membership or class.

Using Hansen's body of work this thesis provides a critical reexamination of the foundations of Chinese logic. It ultimately demonstrates that, contrary to Hansen's theories, Chinese thought can be plausibly interpreted to have the following characteristics: first, there is a concept of truth that may be identified as a 'naïve correspondence theory of truth' in Later Mohist thought; second, nouns in Classical Chinese are neither mass nouns nor count nouns; third, some concept of 'essence' plays an important role in Xunzi's thought; and, fourth, that Chinese thought, in general, has a notion of class and class membership. These conclusions are demonstrated by using a dual methodology of pluralism and embodied cognition to interpret key claims by important Warring States thinkers.

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1. Introduction¹

1.1 What is Chinese Logic?

The label ‘Chinese logic,’ for all its suggestiveness, gives little indication about the nature of the subject. When the work in this area is surveyed, it quickly becomes clear that there is no obvious sense of Chinese logic. In fact, Chinese logic can designate anything from A.C. Graham’s textual reconstruction of the dialectal chapters of the *Mo zi* to Janusz Chmielewski’s deductive formalization of Chinese arguments. This range includes Chad Hansen’s nominalistic theory of Chinese logic, as well as the analogical theories advanced by both Cui Qingtian and Wen Gongyi. It would seem that one way to understand Chinese logic is to recognize the diverse range of scholarship indicated by the label. In this sense, the label would include Chinese Buddhist logic as well as the Chinese logical thought of any time period. This encompassing label is, perhaps, Chinese logic’s most attractive interpretation, since it would include Chinese scholarship in modern, mathematical logic. The downside to this view is that the term becomes so broad that it retains almost no value.

However, many would protest against this understanding of Chinese logic because most feel that the term should designate native, Chinese developments of logic prior to the introduction of Western logic—possibly prior even to the introduction of Buddhist logic. This would limit the time period in question to the early Han Dynasty or before.

¹ In what follows I use the pinyin system for Romanizing Chinese. For individual terms, the Chinese character is generally provided at the beginning of each section and then the pinyin alone is used. Most of the original Chinese text for examples is provided in footnotes, unless having it in text serves some particular point. Translations that are my own are indicated in brackets afterwards. I also follow the Chinese method of citation for classical texts, indicating the chapter and book for each passage (all Classical Chinese texts are public domain and my examples taken from either the Gugong Database or the Chinese Text Project). Last, I also follow the Library of Congress’s system for citing Chinese works (e.g., *Mo zi* instead of *Mozi*).

This more nativist (or essentialist) view of Chinese logic is indeed quite common, as it can be seen that most Western scholarship focuses on this time period. Chinese scholarship, of course, is broader in its study of Chinese logic, even if it handles Buddhist logic as a separate subject area within the broader field of Chinese logic.² This sense of Chinese logic is interesting because it focuses on the historical development of logic in China. The danger, though, is in essentializing a notion of Chinese logic as being entirely unique. This historical sense, and much of the literature that takes a historical point of view, often considers the logical developments of this geographical area and period of history as being unique to China (of course, unique to China as generally defined in contrast to Western logic). Moreover, these theories of the uniqueness of these logical developments are also thought to say something significant about the rationality or reason of Chinese people, both of the time period and in general.

Perhaps, then, a different way of understanding Chinese logic is to simply allow that the ‘Chinese’ aspect refers only to a geographic label. This would seem to invoke Zhai’s distinction between ‘logic in China’ and ‘Chinese logic’ (Zhai 2007, 15). The former includes any study of logic within China (be it Western or Chinese), and the latter is focused on studying the characteristics and historical development of Chinese logic. It is clear that the former term is inclusive of the later. However, this does not make the matter at hand any clearer, since we are still unable to find any principled delineation between ‘Chinese’ logic and logic in the West. Indeed, considering the vast influence of Quine’s doctrines of radical translation and the indeterminacy of translation, there would seem to be no distinction between logic in China and logic anywhere else in the world, since “logical truth is guaranteed under translation” (Quine 1986, 83).

² This difference is marked in Chinese scholarship by the terms *mingxue* (名學) and *yinming* (因明).

Furthermore, given the widespread belief (at least in the West) that logic is a science, discussing a distinct notion of ‘Chinese logic’ seems absurd (and akin to inquiring into the nature of ‘Chinese chemistry’ or ‘Chinese physics’). Thus, it would seem that the geographic or historical label is the best understanding of this term, and would also seem to be the most innocuous interpretation. However, following such a strategy falsely assumes widespread agreement within the field of Western logic about what, exactly, logic is. Instead, it is the case that there are many competing logics in the West. This, in turn, also makes discussing ‘Chinese’ logic more meaningful beyond geographical or historical novelty.

If one recognizes the present plurality in Western logic, Chinese logic is simply one system among many. However, this account does not address the question of whether or not Chinese logic is mathematically equivalent to some system of Western logic, formulated in a different place with different terminology. This is a particularly necessary and useful inquiry, since past research gives us little insight into the formal details of a ‘Chinese’ system of logic. There are some notions and clues scattered throughout the research of several scholars across many years, but none of the related insights have been collected in any systematic fashion. Furthermore, since Hansen (1975) first started to discuss his mass noun hypothesis and his theories of Chinese logic, this avenue of research has been unavailable to scholars, since Hansen’s theories inherently prevent a deductive or formal interpretation of Chinese logic. There simply is not enough data at this point for any claims about Chinese logic being its own unique system or an early formulation of some Western system to be well founded.

1.2 Chad Hansen and Chinese Logic

The general goal of my research is to study entailment in Pre-Qin Chinese logic. However, it turns out that Hansen's interconnected theories about truth in Early Chinese thought, his conclusions about nouns in Classical Chinese, and his Pre-Qin ontological theories of nominalism and mereology prevent any successful deductive interpretation. For example, Quine (1986) thinks that logic is about logical truth. If Hansen is right in that "Chinese philosophy has no concept of truth," then not only is Chinese logic not deductive, but it is also (at least according to Quine) not even logic (Hansen 1985a, 492). Of course, not everyone accepts Quine's characterization of logic, but it is undeniable that truth is a key concept in deductive logic—so much so that without a concept of truth, the deductive logics are reduced to novel mathematical systems of no real consequence. However, even if Chinese philosophy had a concept or theory of truth, a deductive interpretation is still excluded by Hansen's ontological theories, as they exclude any notion of class, set, or membership.

Chad Hansen's *Language and Logic in Ancient China* (1983) represents the first major and comprehensive theory of Pre-Qin logic in English scholarship. It is the first work that attempts to go beyond comparing Chinese logical thought to Western logic, in order to develop a comprehensive theory of Chinese logic. Prior to this book, most work on the history of Chinese logic was focused on working out the logical implications of various Pre-Qin thoughts in a largely piecemeal fashion. It is in this book that Hansen develops the full logical implications of his mass noun hypothesis, which is that "Chinese language, during this classical period, tends towards a mass noun syntax" (1983, vii).³

³ Hansen first proposed the mass noun hypothesis in his 1975 article, "Ancient Chinese Theories of Language." In this article, however, he is mainly concerned with Pre-Qin theories of language.

This hypothesis is used to develop a “stuff ontology,” which in turn supports his conception that Pre-Qin logic was largely concerned with “a part-whole dichotomy” (1983, vii). Hansen uses his hypothesis to interpret “On the White Horse” by Gongsong Long, as well as other Pre-Qin strains of thought generally considered to be of logical importance.

Since the introduction of Hansen’s mass noun hypothesis and the later publication of his *Language and Logic in Ancient China*, Hansen’s theory of the nature of Chinese logic has dominated the field. His work is still debated, criticized, and supported in the study of Chinese logic—so much so that the majority of articles published on Chinese logic discuss his research. Most scholars accept (to varying degrees) his position on the mass noun syntax of Classical Chinese and on the part-whole ontology in Pre-Qin thought (even if many do not wholly accept his arguments for either theory). Almost every position possible has been taken on his work. Chris Fraser, in his 2007 article “Language and Ontology in Early Chinese Thought,” supports Hansen’s conclusions while rejecting the mass noun hypothesis. Graham accepts the part-whole ontology, but develops the idea in a different manner (Graham 1986, 92). Bo Mou rejects the mass noun hypothesis in favour of his collective noun hypothesis (Mou 1999, 47). Christoph Harbsmeier fully rejects both Hansen’s part-whole ontology and mass noun hypothesis (Harbsmeier 1991).

The problem with earlier criticisms of Hansen is that most tend to focus on only one or two parts of his logically-relevant theories (but never all parts). However, any worthwhile criticism must take into account that Hansen’s explicit purpose in studying Chinese logic is to create a comprehensive and coherent network of ideas in order to

create a general interpretive context (Hansen 1983, 28). Thus, dealing with only one strand of his thought usually proves insufficient for disarming his general interpretive agenda.

On the whole, it seems as if Hansen's interpretive agenda and interpretations have received wide acceptance, although it should be mentioned that while many scholars accept most of his conclusions, few accept the arguments that lead to his conclusions. The result of all the work of previous scholarship on Hansen's theories, then, has been the creation of increasingly refined arguments for his conclusions. The difference between my current undertaking and previous criticisms of Hansen is that I aim to invalidate Hansen's entire interpretive framework and his general interpretive theory, as well as to argue against the individual theories that create this framework.

It can be seen that there are four distinct claims in Hansen's theory of Chinese logic: truth, the mass noun hypothesis, mereology, and nominalism. His treatment of each of these claims tends to overlap with the others, which is not unreasonable, yet it should be made clear that each of these claims is distinct. According to Hansen, Chinese philosophy has no role for a concept of truth. Mereology is the ontological theory that deals with parts, wholes, and the relationship between them. Nominalism is a related theory that recognizes individuals as the only things that exist. However, Hansen's nominalism (called 'behavioural nominalism') is a further restriction on the nominalist position. He claims that Chinese thinkers are only committed to the existence of concrete and physical objects. While mereology and nominalism are clearly related positions, it should be evident that one can have a theory of parts and wholes without thinking they

are the only things that exist. It will be beneficial, then, to treat each of the claims that make up Hansen's ontological theory separately.

1.3 Thesis Organization

This remainder of this Thesis follows the following structure: Section 2 ("Methodological Reflections") deals with methodological issues. It first discusses and criticizes Hansen's methodological principle of coherence and its related notions. The section then discusses Michael Puett's general methodological criticisms. Lastly, it discusses the two main methodological assumptions used in this thesis: pluralism and embodied cognition.

Section 3 ("Truth") discusses and criticizes Hansen's theory of truth in Chinese philosophy. It first reviews other criticisms and reactions to Hansen's theory. This review is followed by an argument in favour of a 'correspondence theory of truth' in Early Chinese philosophy.

Section 4 ("The Mass Noun Hypothesis") systematically treats Hansen's mass noun hypothesis. First, it reviews the major scholarly criticisms and developments of this hypothesis. It then discusses and criticizes how Quine's theory of language acquisition provides the theoretical context for the debate on mass nouns in Classical Chinese. The section then presents evidence from cognitive science to demonstrate the empirical implausibility of Hansen's mass noun hypothesis.

Section 5 ("Nominalism") handles Hansen's theory of 'behavioural nominalism' in Pre-Qin thought. It starts with a review of the research and criticism of 'behavioural nominalism.' Then, it discusses the notion of similarity in Xunzi's thought. It closes by

suggesting a novel interpretation of *shi* (實) using the interpretive context provided by folkbiology research.

Section 6 (“Ontology”) discusses Hansen’s mereological thesis. It provides context for the discussion that follows regarding Fraser’s interpretation of *jian* (兼) and *ti* (體) in the Later Mohist “Canons.” The section then posits an interpretation of *lei* (類) as a cognitive container metaphor.

Each section begins with its own introductory remarks, including a literature review, and closes with a summary of the discussion. Section 7 is the final section of this dissertation. It provides a general summation of the claims and arguments presented in this thesis, and concludes the present investigation into the foundations of Chinese logic.

2. Methodological Reflections

2.1 Hansen's 'Coherent Theory of Methodology'

Chad Hansen's avowed methodological approach is what he calls the 'Coherent Theory of Methodology of Interpretation' (Hansen 1983, 3). He describes this methodology by writing that:

[A]n interpretation of a passage in a classical Chinese philosophical text should be coherent with an interpretation of the chapter, and that with one of the book. Our interpretive theory of a book, in turn, should be a coherent part of a theory of the author's philosophy, and that with a theory of the school of which he is part, which should be a coherent part of that philosophical milieu of the time, which should be a coherent part of that tradition of philosophy, which should form a coherent part of one's theory of the nature of philosophy itself. (Hansen 1983, 6)

The above description is enough to make one believe that Hansen's coherence methodology is really a sort of holism in a methodological disguise. Hansen's suggestion is only reasonable if you understand and conceptualize Warring States Chinese philosophy as a continuous whole, wherein each thinker (or each text) is a part of a larger whole, and the best interpretation renders individual texts coherent within the greater context of Chinese philosophy. Thus, an interpretive theory for any given text should be identical to a general conception of Chinese philosophy.

Heiner Roetz, however, criticizes Hansen's methodology by pointing out that there is nothing novel about his methodological principle of coherence:

By pointing out the forerunners of Hansen, I want to call attention to a certain uniformity in the Western view of China. Hansen's project is undoubtedly the most coherent and perhaps the most ambitious in the linguistic-pragmatic direction. Nevertheless, what he presents is not a new interpretation, but rather the reformulation of a quite familiar one with new categories. His analytical approach is linked to a well-known view of Chinese ethics as being holistic and heteronomous and lacking the ideas of freedom, individualism, and personal dignity. It is much more plausible to understand a cultural tradition by way of the

common possession of a specific language, if it is interpreted in terms of homogeneity and conventionalism. This also explain Hansen's most important heuristic device: a hermeneutic of *coherence* which favors a homogeneous interpretation over and against a differentiated one. (Roetz 1993, 70)

While it is the case that many scholars have argued against the more extreme parts of Hansen's interpretations and the more radical applications of his coherent methodology, Hansen's work still exerts a great deal of influence in the field today.⁴ It is also noteworthy that many scholars have not questioned Hansen's methodology—even though there are several questionable assumptions about 'coherence' as a principle of interpretation.

The first of these assumptions is regarding the notion that Warring States philosophy forms a coherent whole. The only unifying feature, of Warring States texts, is that they are all the products of a certain culture and a certain time. Hansen does not demonstrate any reason or provide any evidence supporting his notion that they form a coherent whole. He only claims that a coherent theory is better than a incoherent theory. However, while I agree that a scholar's theory should be coherent, there is no reason to think that a body of texts need or should be coherent. A survey of Western logic would quickly demonstrate that the entire body of logical work is not coherent (since many theories and perspectives contradict one another). A lack of coherence in a large body of texts is neither virtue nor vice, as it only indicates that the body of texts under consideration is probably quite large. If we are taking Pre-Qin philosophy seriously, then a lack of coherence would only indicate that there were several competing thinkers and texts, which we happen to know is true of the Warring States period.

⁴ Perhaps the easiest example of Hansen's continuing influence can be seen in the *Journal of Chinese Philosophy* (2007), issue 4. It has a special theme on the "White Horse Dialogue," in which Hansen's interpretation of the text dominates.

The second assumption is that the ‘principle of humanity,’ attributed to Richard Grandy, is worth following (Hansen 1983, 5). Grandy describes the principle of humanity as “making the pattern of connections among evidence, belief, desire, intentions, expectations, hopes, and fears as similar as possible to our own” (Grandy 1973, 451). Grandy argues for a revision of Quine’s ‘principle of charity,’ a revision that he calls the ‘principle of humanity.’ Quine’s principle of charity depends on his theory of the indeterminacy of translation: “Manuals for translating one language into another can be set up in divergent ways, all compatible with the totality of speech dispositions, yet incompatible with one another” (Quine 1960, 27). This doctrine of Quine’s essentially asserts that there is no unique, true translation of a given text or speech. On the other hand, the principle of charity is a means for deciding which translations are better than others, since any translation that represents the speaker as being illogical must be mistaken (Quine 1960, 57–61). The principle of charity states that “Logical truth is guaranteed under translation” (Quine 1986, 83). Thus, it follows, we must use our logic in translation. At this point it should be clear that Grandy is extending radical translation to areas other than logical truth.

The third and final misguided assumption that forms part of Hansen’s methodology is that his background philosophy of mind is quite wrong. Hansen takes much care to refute what he calls the ‘special logic thesis’ (Hansen 1983, 10–17). This is a task for which I applaud him, since I heartily agree that it is wrong to assume a vastly different psychology (or logic) for Pre-Qin thinkers. Nonetheless, the problem arises when one notes that Hansen’s understanding of language and its relation to human thought is cognitively unfeasible. This last point, however, is simultaneously the most

minor and most major charge against Hansen. At the time that he published *Language and Logic in Ancient China* (and even, in many cases, today), the ‘philosophy of mind’ that provides the intellectual context for his discussion was perfectly reasonable. This philosophy of mind characterizes the mind as a blank slate, and characterizes language as the medium of thought. (The most extreme case of the latter is linguistic determinism—that language determines thought.) However, evidence from cognitive science empirically demonstrates that the mind is not a blank state, and that thought is not language. Nonetheless, what matters is that Hansen’s call to coherence is only meaningful within this context: if his account of mind and thought is rejected, then coherence ceases to have any evaluative power for determining which interpretation, among many, is better or worse.

2.2 Puett’s Criticism of the Essentialist-Evolutionary Methodological Frameworks

Michael Puett, in *To Become a God: Cosmology, Sacrifice, and Self-Divinization in Early China*, provides a far too brief, yet utterly insightful, historical overview of methodology in the field of sinology:

One sees...two concerns that will appear repeatedly throughout twentieth-century discussions of Chinese thought: a concern with comparing China and the West with reference to an evolutionary development of rationality and a concern with comparing China and the West by contrasting their purportedly distinctive cosmologies... These two models came to be presented in opposition to each other. Indeed, these have become two of the basic poles around which scholarship on early Chinese thought and religion has developed.⁵ (Puett 2002, 7)

My preference, however, is to view Puett’s “two poles” as the two ends of a spectrum, since it is clear that some scholars of China hold more extreme examples of either

⁵ Puett labels the methodological view that contrasts the different cosmologies as the “cultural-essentialist model” (Puett 2002, 14). For brevity’s sake, I shall refer to this methodological model hereafter as the ‘essentialist model.’

methodology than others. Moreover, by emphasizing that these two methodologies create a spectrum, we are able to better understand those scholars whose works lie between the two extremes. It also allows us to understand how conscientious scholars, in efforts to avoid the pitfalls of their dominant methodologies, generally fall prey to the criticisms from the other side of the spectrum. Indeed, Puett's criticism of this methodological spectrum makes it quite clear that the dialogue between scholars at either end has created a type of spontaneously-generating universe of scholarship that seems similar to the idea of how *yin* and *yang* create the physical universe.

Interestingly, Puett's discussion also makes it clear that locating scholars' methodological approach within this spectrum is as easy as characterizing whether their research emphasizes similarity or difference. Scholars advocating the evolutionary methodology tend to emphasize similarity between Chinese and Western thought, while scholars advocating the essentialist view tend to emphasize difference. In some ways, this is a rather gross over-simplification of things, since both methodological viewpoints generally serve to showcase the ways that China is ultimately different from the West:

Both frameworks, then, rest on remarkably similar foundations. Both rest on seeing a fundamental dichotomy between China and the West... The differences simply come down to whether this distinction is worked on a contrastive model (with China and the West holding opposing assumptions) or on a developmental line (with China and the West occupying different positions on the yardstick). (Puett 2002, 24)

The difference between the two ends of the spectrum, it seems, is that the scholars at one end interpret the difference negatively, and the scholars at the other interpret it positively.

Puett criticizes the essentialist end of the spectrum, where Hansen's methodology can be found, by noting that its methodology "requires taking particular texts out of context and reading them as assumptions of the entire cultures being compared" (Puett

2002, 23). In our case, this involves taking Late Warring States or Han Dynasty cosmological texts and reading them as the basic mode (or as underlying foundation) for all of Chinese thought, regardless of the period. It should be apparent, at this point, that this methodological approach commits the error of hasty generalization. Furthermore, it can be seen that this approach also begs the question, since even texts with no evidence to support the general theory are thought to have correlative cosmology as an underlying assumption. Thus, no Chinese text can escape being interpreted in light of the general theory—which, in turn, uses the texts as evidence for the general theory.

The evolutionary end of the spectrum fares no better under Puett's analysis. He accuses this methodological approach of "ignoring the contexts in which specific claims were made in favor of a universal yardstick" (Puett 2002, 23). The evolutionary 'yardstick,' according to Puett, is rationality. Indeed, it can be seen that this methodology fares somewhat worse than the essentialist model. There is, at least, some evidence of cosmological thought in the history of Chinese thought, while there is no evidence at all that 'rationality' was a goal for Chinese thinkers. The evolutionary model falls into the Orientalist trap of assuming that 'good' thought must be understood according to Western categories. It is fairly easy to demonstrate that rationality is a key value and attribute of 'good' philosophical thought in Western philosophy—the importance placed on deductive logic is enough to make this clear. Even if it could be shown that Chinese thought fails to be rational in any Western sense of the word, this would only demonstrate that it fails to be 'rational' in the Western sense of the word. It would be wrong to draw any further conclusions in the absence of other evidence.

Furthermore, it is clear that almost all advocates of this methodological model treat rationality as a primitive notion. What's more, it is easy to see that many scholars still use the classical model of rationality (of which computers are the best exemplars). Slingerland calls this view of rationality the 'ideal of disembodied reason' (Slingerland 2008, 9). Slingerland also points out that "[w]hat *is* probably unique to the West is the manner in which...the particular cluster of human cognitive abilities encompassed by the label 'objectivism-rationalism' has been both obsessively refined and increasingly singled out as the only worthwhile mode of human cognition" (Slingerland 2008, 72).

Moving beyond this traditional, Western concept of rationality is absolutely necessary, and Slingerland's suggestion offers a viable way to move beyond the evolutionary-essentialist spectrum. As Slingerland notes:

[The] pure, bloodless rationality seems to play little role in ordinary decision making, and indeed an absence of emotion...apparently changes us into ethical incompetents. We are rarely fully conscious or in control of what 'we' are doing, and indeed the very idea of a unitary, conscious 'I' in control of the dumb, animal-like non-self (the body, the emotions) appears to be an illusion. (Slingerland 2008, 34)

Indeed, we can move beyond the kind of normative conclusions that perceive China something less than rational by grounding our comparative methodology in an understanding of rationality that includes emotions, is often unconscious, cannot be propositionally represented, and based on an embodied understanding of the mind. With this new model of comparison, it is possible that China's failure to generate any meaningful discussion about the nature of rationality could simply mean that they were not inclined to chase after 'ghosts in the machine.'

It is evident that both the evolutionary and essentialist methodologies rely on selectively considering the available evidence. All positions within the spectrum,

furthermore, also rely on a certain level of circular reasoning. The evolutionary model looks for rationality in Chinese thought based on an assumption that they are correct about rationality and that it should be valued or studied by early Chinese thinkers. The essentialist model begins with the hypothesis that the correlative cosmology is distinctive of Chinese thought. It uses certain late Warring States and Han dynasty texts as evidence, and then considers earlier texts as support for the correlative cosmology rather than as possible counter-examples of the essentialist hypothesis.

Although he never says it outright, the lesson we can learn from Puett's methodological criticism is that the China-West dichotomy is false. Moreover, it is not false in the same way that post-modernism wants us to believe that the subject-object dichotomy is false; rather, it is simply wrong, no matter what conceivable conceptual framework is provided. While it cannot be denied that there are both real similarities and differences between Chinese and Western philosophy, it is the conceptual framework that informs our understanding of the similarities and differences that must be revised. However, it appears that we are left with the challenge that Miranda Brown poses at the end of her article about correlative thinking and methodology:

No doubt, a fully worked-out methodological alternative to either evolutionism or essentialism cannot be found in these works. That said, what we do glimpse is a new way of posing the question, a question that falls upon future scholarship to answer: If the Chinese were not simply 'primitives' or 'others,' how can we explain the differences between Chinese and European thinking? (Brown 2006, 249)

Indeed, how can we explain the similarities and differences between Chinese and Western philosophy without resorting to either the evolutionary or essentialist methodologies? The following sections will explore that question in greater detail.

2.3 Methodological Suggestions

2.3.1 Pluralism

The past decade or so has seen the emergence of alternative methodologies that re-imagine the conceptual framework in which similarities and differences between China and the West can be discussed without recourse to either the evolutionary or essentialist methodologies. Two of the newer methodologies are particularly compelling: (1) what might be termed Puett's 'pluralist' methodology; and (2) Slingerland's call to embodiment. The benefits of each will be discussed, followed by a specific criticism of Hansen's methodology and a detailed description of my own methodological approach.

Puett's recommendation for avoiding the methodological errors inherent in the evolutionist-essentialist spectrum is to:

Dispense with both of the frameworks discussed above—both the contrastive and the evolutionary models. We should instead work toward a more nuanced approach in which we make no *a priori* assumptions regarding single statements made in single texts and the significance of individual claims. Once this is done...we may discover a rich, and perhaps more troubled, world of debate....
(Puett 2002, 24–25)

Above, I called this same approach as 'pluralism,' which I feel is apt considering the intent of the methodological proposal. In some ways it can be seen that either framework involves applying a general theory (grounded on only a few texts) to all Chinese thought. Puett's suggestion is an inducement to do away with notions of 'Chinese thought,' 'Confucian thought,' or 'Daoist thought.' Ultimately, he argues, these methodological frameworks oversimplify their subject by ignoring key information.

While Puett is not the first scholar to suggest disregarding the 'school' labels, his suggestion goes far beyond this simple terminological point. He really wants us to take every text as containing its own unique locus of claims and as a unique product of its own historical circumstances. Indeed, he goes so far as to suggest that we understand the

claims within each text as unique, historical products. I agree that going to this extreme is necessary if we are to seriously evaluate the fact that Pre-Qin texts are often neither the products of a single author, nor were they written at a single time. In fact, as is generally well known, even those texts largely attributed to a single thinker were likely not written from beginning to end as a single work. Rather, these texts usually accrued over time as a collection of thoughts from a thinker and his disciples. Therefore, Puett's suggestion that each claim be understood on its own before constructing a general theory is simply sound methodological advice.

Puett's suggestion that we "ask why statements are made in particular situations, to understand the cultural significance they would have had at the time, and to work out the historical consequences of the ensuing debates," seems almost too obvious to be worth stating—yet it still needs to be said (Puett 2002, 25). Chinese thought itself tends to be holistically understood in that each thinker or text is understood to be only part of a larger whole. (Interestingly, Hansen's work probably forms the most explicit example of this approach in Chinese thought.) Puett's suggestion—that this holistic understanding must be left behind, and that we should be prepared to accept the presence of a "more troubled, world of debate" in early China—is necessary if we wish to begin making more meaningful claims about Pre-Qin thought (Puett 2002, 25). Understood in this way, Puett's suggestion is an argument for pluralism in Chinese thought.

The potential efficacy of Puett's methodological suggestion should now be apparent. His call to pluralism suggests discarding the evolutionary and essentialist frameworks in favour of evaluating each claim on its own, before generalizing. Puett seems quite right in noting that it is "meaningless to assess the rationality or lack thereof

of a given text unless one first, at the minimum, ascertained the contemporary meaning of the text” (Puett 2002, 23). Scholars have been so concerned with creating general theories of Chinese thought that they have left us with insufficient information about what the texts mean or how they might be related to each other.

The recent explosion of scholarly interest in the Guodian and Shanghai archaeological texts supports Puett’s suggestion that we ought to dispense with these comparative frameworks.⁶ Ultimately, it must be recognized that we probably only know—and will only ever know—a small fraction of the texts and ideas that were circulating during the Warring States period. Therefore, we must accept that we will never have an adequate sample of texts to support a general theory of Warring States thought. Indeed, these recent archaeological finds have made it abundantly clear that even if we are justified in conceptualizing Warring States’ texts as a general whole, this ‘whole’ is unknowable. Thus, interpreting the texts as part of an unknowable whole has no interpretive value—especially in this case, where it is highly unlikely that we will ever have access to all texts circulating during the Warring States period.

Furthermore, the Guodian and Shanghai archaeological texts have also demonstrated a woeful lack of general theories of Pre-Qin thought to incorporate new information. If our methodological frameworks had been sound, and if our hypotheses about the nature of Warring States thought had been well founded, then the Guodian and Shanghai texts should have fit easily into the existing theories of Warring States thought, once the textual and ordering issues are resolved. So far, this has not been the case.⁷ It is

⁶ For those interesting in the scholarship on the Guodian or Shanghai texts, see Li Ling, Xing Wen, Robin Yates, Liu Xiaogan, or Sarah Allen.

⁷ I would find this especially true of “*Tai yi sheng shui*” (“Great One gives birth to Water”), attached to the *Lao zi*, which provides a previously unknown cosmology. While the general outline of the cosmology still

precisely because the time and place of study is so distant that we must be even more cautious in positing general theories, and we must never assume that we have all the relevant information. This evidence may be strong enough to motivate claims that pluralism is a fact of Warring States thought, and not simply a methodological recommendation for its study.

I have created a slight contradiction with my comments in support of a pluralistic understanding of Warring States thought. My introduction made it clear that this thesis is an investigation into the foundations of Warring States logic. As part of these investigations, I am constructing a general theory—exactly the approach I have been criticizing in these methodological reflections. However, it can be seen that general theories are needed for comparative work. While this work is not directly comparing any part of Chinese thought to Western thought, it should be clear that Western logic provides the context for my discussion on Chinese logic. Indeed, given the developmental difference between the two traditions, logic of any kind really cannot be discussed without using Western logic as an intellectual context. All the key concepts that make logic meaningful as a subject are Western in origin. Hence, in essence, the study of Chinese logic is inherently comparative. Furthermore, the purpose of this project is to create an interpretation about the foundations of Chinese logic in order to facilitate a more direct comparison between the two traditions. Thus, it behooves me to find some way to incorporate Puett's call to pluralism into a comparative framework that avoids the methodological pitfalls inherent in the evolutionary-essentialist spectrum.

supports holism, this text makes it abundantly clear that we can never assume complete access to all the thought extant in the Warring States period.

2.3.2 Embodied Cognition

Fortunately, there is an appropriate ready-made methodological framework at hand, and as a result there is no need for me to create my own. Edward Slingerland, in *What Science Offers the Humanities*, suggests that:

A nondualistic approach to the person promises no privileged access to eternal, objective truths, but is based upon the belief that commonalities of human embodiment in the world can result in a stable body of shared knowledge.... This approach to the humanities starts from an embodied mind that is always in touch with the world, as well as a pragmatic model of truth or verification that takes the body and the physical world seriously. (Slingerland 2008, 8)

While Slingerland is not the first scholar to suggest that an embodied understanding of people is preferable, he does present a clear argument for why scholars of the humanities should care about science. Nonetheless, the fact that our physical bodies are similar seems almost too obvious to mention. However, this is a crucial insight, considering how much cognitive sciences research challenges traditional, Western conceptions of the mind, language, the world, and the relations between them.

While Slingerland provides us with a general framework for comparative study, we still do not have a positive methodological reason for believing that his will be a useful approach. Slingerland's work, though, does indeed offer at least one good reason why paying due attention to cognitive science will be beneficial to humanities scholars:

Practically speaking this means that humanists need to start taking seriously discoveries about human cognition... which have a constraining function to play in the formulation of humanistic theories—calling into question, for instance, such deeply entrenched dogmas as the “blank slate” theory of human nature, strong versions of social constructivism and linguistic determinism, and the ideal of disembodied reason. (Slingerland 2008, 9)

Of course, it could also be argued that scholarly exploration should not be constrained by any such framework. The purpose we believe our work, as scholars, serves will determine how we respond to this argument. Since it is my personal belief that

scholarly work should be directed towards obtaining knowledge, I contend that free, unrestrained speculation does not serve a worthy purpose. The hardest selling point for Slingerland's argument, or my own, may be that they reflect a normative understanding of scholarship in the humanities.

Moreover, given the distance (both in time and culture) of the period that this thesis examines (i.e., Warring States China), we must question whether or not we can ever be sure of knowing anything about this period in time (given the fact that we have so little information, and few good theoretical frameworks within which to interpret what little information there is). However, for those of us who do believe in knowledge, this is precisely where Slingerland's methodological point serves its greatest purpose: if we cannot ever know for sure what is right, at least we can point to what is not right. If we can be, at the very least, not wrong about Warring States Chinese culture and thought, than that may be the closest we can ever come to being right about it. Puett's call for pluralism is a good methodological suggestion, but it leaves us with serious uncertainties if the information about certain texts or claims is incomplete (or altogether missing). Although Slingerland's suggestion does not help us to fill these gaps, it does prevent unfounded speculation about the missing information. Indeed, by assuming a shared embodied experience of the world, we can begin to posit theories that are at least empirically plausible.

The easiest way to demonstrate this methodological point would be with an example. The most relevant example of how cognitive science can place necessary constraints on theoretical speculations in the study of Chinese thought concerns the validity of linguistic determinism. Hansen is often accused of being a linguistic

determinist because of his mass noun hypothesis, although he generally denies holding such a view (Hansen 1985b). Linguistic determinism seems to occupy a nebulous position in cross-cultural studies, in that many scholars appear to be linguistic determinists to some extent while simultaneously disavowing the validity of the theory. We can see the influence of linguistic determinism almost every time linguistic features of Chinese are used in causal explanations of Chinese culture.

Cognitive science is able to demonstrate the falsity of the linguistic determinist position (Slingerland 2008, 110–115). More specifically, studies in cognitive science have made it quite clear that thought is not language (Slingerland 2008, 111). Although language influences (or may facilitate) thought in some very important ways, much of our thinking is handled by unconscious or non-verbal processes in our brains. Furthermore, according to Slingerland, language can sometimes impair our cognition (Slingerland 2008, 115). Therefore, it would seem to be empirically false to make causal arguments from language to culture (or thought).

In this way, we can see how Slingerland's methodological claim neatly ties in with Puett's pluralism: Puett's suggestion that we focus on individual texts or claims also precludes using linguistic features in causal arguments. In Slingerland's case, we are told that it is erroneous to focus on the language instead of on the actual claims within texts. (We might refer to this viewpoint as not seeing the trees for the forest). Of course, this would not be the first time that arguments have been made against linguistic determinism. Yet, this argument is different. What is at stake here goes beyond theoretical or methodological concerns. In this case, it can be demonstrated that linguistic determinism

is empirically false. Therefore, any argument with a premise based on linguistic evidence is simply wrong (and not as a matter of theoretical disagreement).

The benefit of allowing ourselves to be constrained by this empirical evidence is that we no longer need to waste time and energy entertaining studies that incorporate any amount of linguistic determinism. Indeed, this approach should now be considered invalid. By limiting our inquiries to those not involving linguistic determinism, we can devote our resources and energy to more fruitful pursuits. If anything, a century of using the essentialist-evolutionary methodologies to study China, which has left us with frustratingly few answers, should encourage us that trying something new will, at the very least, relieve the tedium of reading the same speculative findings over and over again. After all, even with over a hundred years of study based on this methodological spectrum, the picture we have built of Classical China is remarkably similar to the one we started with.

This thesis will be more or less structured by the implementation of these two methodologies. Thus, I will examine specific claims and attempt to create a context of debate in order to illuminate both the motivations for the claims themselves, as well as the presence of deductive concerns in Warring States texts. Embodied cognition will serve as my general interpretive framework and Puett's suggestion will mainly be followed by exercising caution in making claims (i.e., if I use examples from a text then any conclusion I draw from my argument will be restricted to that text only).

3. Truth

3.1 Chad Hansen's Account of Truth in Early Chinese Thought

In 1985, Chad Hansen claimed that “Chinese philosophy has no concept of truth,”⁸ which is still considered a more or less warranted interpretation of Chinese philosophy (Hansen 1985, 492). In many ways, it appears manifestly absurd to engage in a debate about whether or not Chinese philosophy had a ‘concept of truth.’ Nonetheless, it is apparent that Hansen’s claim is considered to be legitimate enough to warrant discussion, thus leaving my current project in jeopardy—after all, no deductive interpretation of Chinese logic is possible if there was, in fact, no concept of truth in early Chinese philosophy. Truth, a generally important philosophical concept in the West, is absolutely essential to the study of logic. Logic, conversely, holds little meaning when not interpreted by some semantic theory or another (for without semantics, logical systems become nifty or novel bits of mathematics at best).

Several scholars have advanced important criticisms against Hansen’s ‘absence of truth’ thesis. Roetz (1993) finds fault with Hansen from the opposite, evolutionary end of the interpretive spectrum that was criticized in Section 2 of this thesis; Harbsmeier (1998) provides a similar analysis using an evolutionary perspective. Unfortunately, as pointed out in Section 2, we have reason to believe that the conceptual framework for this entire debate is problematic. More to the point, as will become clear in the following discussion of the evolutionist criticism of the absence of truth thesis, neither scholar has done much to refute the spirit of Hansen’s claim. Rather, both seem to engage the more common-sense position against Hansen and use arguments that Hansen would not consider

⁸ In the interest of brevity, this claim will be called the ‘absence of truth’ thesis hereafter.

legitimate threats to his thesis. However, if we look to Van Norden's recent criticism, we begin to see a clear way to disprove Hansen's claim.

3.2 A Review of the Criticisms of Hansen's Account of Truth

Roetz gives a fairly concise and to-the-point exposition of Hansen's absence of truth argument. Roetz's criticism (1) argues against the linguistic features of Hansen's thesis; and (2) uses textual evidence to demonstrate that there are concepts of truth in Chinese philosophy. In some ways, it is curious that Roetz spends any amount of time discussing the first point, since he rightly criticizes Hansen by noting that "It is often difficult to decide whether Hansen is talking about Chinese language as he thinks it is or as he thinks Chinese philosophers view it" (Roetz 1993, 72). It is not clear why Roetz engages this aspect of criticism, when Hansen himself remarks that "Part of my argument...will strike some as a version of linguistic determinism" (Hansen 1985, 492). Indeed, it would seem that Hansen is well aware of this possible methodological criticism towards his absence of truth argument.

It is helpful to note that Hansen could be wrong about the linguistic features in Classical Chinese that he identifies. The major feature, relevant to this section of the discussion, is whether or not Classical Chinese has sentences—or, more to the point, whether or not Chinese thinkers thought that Classical Chinese had sentences. At the beginning of his discussion, Roetz notes that "Hansen does not deny outright that something like sentences in Chinese does exist, but he suggests that these can be viewed as 'strings of names'" (Roetz 1993, 77). While Roetz quickly dismisses this finding as a superficial analysis, his comment highlights a certain feature of Hansen's article that he is clearly aware of but does not engage outright (Roetz 1993, 77). Hansen writes:

“Interpretation, not thought, is the issue. An interpretation is a theoretical model for a corpus whose aim is to make the corpus intelligible. The question is which interpretation is best—most plausible, most explanatorily powerful and elegant” (Hansen 1985, 493). Roetz does reject Hansen’s methodological principle of coherence, as noted in Section 2, but this, on its own, is insufficient to demonstrate that Hansen’s interpretation is not the “most plausible, most explanatorily powerful and elegant.”

While Roetz is aware of this particular focus of Hansen’s thesis, it is clear that he has somewhat missed the point: “To answer the question whether the ancient Chinese has an idea of ‘semantic truth’ we have to consider, above all, the normal implications of the standard expressions that come into question” (Roetz 1993, 85). Hansen admits that truth is important for the acceptance of philosophical doctrines (Hansen 1985, 491). More to the point, Hansen also rejects the notion that textual evidence would be able to either support or refute his thesis (Hansen 1993, 492). Indeed, considering how Hansen formulates his argument, there is room, even if one accepts the argument, for claiming that character ‘x’ is a truth predicate. Such a claim, however, would only mean that this character means ‘truth.’ Such a discovery, unfortunately, would not actually demonstrate the falsity of Hansen’s claim (as it is constructed).

The key reason for this lies in Hansen’s claim that “A concept is a role in a theory” (Hansen 1983, 493). It seems to me that this is a rather unusual understanding and use of the word ‘concept.’ Indeed, it is so unusual that if one interprets and criticizes Hansen on a more common understanding of the word, as Roetz does, you end up arguing against a straw man. Furthermore, under this understanding, it is a perfectly coherent argument that truth was understood and valued by Chinese thinkers, while also asserting

that they had no ‘concept’ of truth. Although Roetz ultimately presents a very interesting, insightful, and useful analysis of various Classical Chinese words and passages that express concern with truth, he does not provide any evidence that truth played a role in any Chinese theory (of knowledge, of language, of logic, etc.).

Harbsmeier’s discussion of truth is not explicitly directed against Hansen’s absence of truth thesis. Thus, while Harbsmeier’s discussion follows much the same lines as Roetz’s, the problems in Roetz’s argument cannot count as faults in this case. Nonetheless, Harbsmeier does not provide much evidence against Hansen’s argument, as he mostly attempts to demonstrate that Chinese thinkers had a concept of truth (using ‘concept’ in the more familiar sense of the word). Harbsmeier seems to take a position somewhere between that of Hansen and Roetz:

The ancient Chinese may have taken a pragmatic approach to language and thinking. But as pragmatists should, they had plenty of use for the scientific notion of objective factual truth. Whereas Greek philosophers were very often preoccupied with the notions of factual truth and evaluative truth for its own sake, their Chinese counterparts looked upon language and thought as much more pragmatically embedded in social life. Their key concept was that of the Way (*tao*) of conducting human affairs, not of objective factual or doctrinal truth. (Harbsmeier 1998, 207)

This also does not answer the question of whether or not truth played a role in any Chinese theories. It is also apparent that Harbsmeier is working within the evolutionary framework, as he understands ‘truth’ as a concept that must reach the heights of the “scientific notion of objective factual truth” (as noted above) before it is truly considered a robust theory of truth.

There are two ways that Van Norden finally allows us to gauge the strength and soundness of Hansen’s argument: (1) by the identification of what he calls the ‘lexical fallacy’; and (2) by his direct criticism of Hansen. Indeed, both of these approaches

together make up the first steps that allow for a positive thesis regarding truth in Chinese philosophy. Moreover, it can be seen that Van Norden's discussion of Hansen and his absence of truth thesis is the critical discussion that most closely deals with Hansen's position, as laid out in his 1985 article.

In the first case, it is clear that some of Hansen's argument for the absence of truth thesis relies on the observation that there is no single, clear word in Classical Chinese that easily and consistently translates as 'truth' in English: "The absence of a clear counterpart for 'truth' is particularly striking here. Had there been a concept of truth, the Mohists would have found it convenient in discussing inference. The 'logicians' of the tradition would have been the first to use such a concept" (Hansen 1985, 510). This is a clear invocation of what Van Norden calls the 'lexical fallacy.' The lexical fallacy is essentially the claim that in the absence of some lexical term (e.g., 'truth'), there cannot be a concept corresponding to the lexical term in question (Van Norden 2007, 22). In other words, English only has a concept of truth because it possesses the word 'truth.'

However, while Van Norden's recognition that part of Hansen's argument relies on fallacious reasoning takes some of the bite out of Hansen's thesis, it does not resolve the situation entirely. It remains the case that Hansen may be right about truth playing no role in any Pre-Qin theory. Van Norden's first important criticism against Hansen (and against this entire debate) is that Hansen never clarifies which theory of truth he is talking about (i.e., he represents truth as an ahistorical, monolithic concept in Western philosophy). The charge is essentially an instantiation of Puett's general criticism of the essentialist methodology—that their arguments consistently erase the historical contexts within which particular claims are meaningful. Still, Hansen does say that he is

discussing the ‘semantic’ concept of truth, which he takes from C. S. Peirce as meaning “the relation of language and states of affairs” (Hansen 1985, 362). Although this definition seems to provide some guidance, it really does not help at all; Van Norden identifies five different theories of truth in Western philosophy, of which the ‘semantic’ version is only one (Van Norden 2007, 362).

While Van Norden’s observation is to the point, he never discusses the ‘semantic’ account of truth. Even more importantly, he never discusses truth at all within Hansen’s conceptual framework. Indeed, in some ways Van Norden’s account further confuses the issue at hand. The five accounts of truth that Van Norden identifies are “correspondence, coherence, pragmatic, redundancy, and semantic” (2007, 362). He then goes on to claim that all these theories agree on a ‘thin’ account of truth: “‘S’ is true if and only if S” (Van Norden 2007, 362). This, however, is not a claim that would be accepted by many Western philosophers. A cursory online examination of the ‘coherence theory of truth’ quickly reveals that this theory does not agree with Van Norden’s thin account of truth (Online Stanford Encyclopedia of Philosophy). Indeed, further investigation reveals that the ‘thin’ account of truth is actually the ‘deflationary theory of truth,’ which, in turn, is the same theory of truth that Van Norden identifies as the ‘redundancy theory of truth’ (Online Stanford Encyclopedia of Philosophy).

I agree with Van Norden that this discussion about truth desperately requires clarification before any resolution can be obtained. However, Hansen’s special use of ‘semantic’ must be kept in mind if this discussion of truth will have any relevance to his arguments. If ‘semantic’ is about the relation of language to states of affairs (i.e., the world), then the thin, deflationary, or redundancy theory of truth is semantic according to

Hansen's conceptual framework. Indeed, according to Hansen, the correspondence theory of truth is also subsumed under his version of semantic truth. (One would also assume the same of whatever theory of truth Van Norden is identifying as the 'semantic theory of truth.')

One interesting observation from this discussion so far is that Hansen never really discusses whether or not Pre-Qin philosophy has a pragmatic theory or concept of truth. In light of Hansen's commitment to pragmatism in Chinese philosophy, such a discussion would certainly seem to be worthwhile.

3.3 The 'Naïve' Correspondence Theory of Truth in Chinese Philosophy

It turns out that Van Norden's 'thin' account fails under Hansen's definition of 'concept' being a role in a theory. Even if all Chinese thinkers were pragmatists, Hansen would probably still argue that truth (pragmatist or otherwise) plays no role in Chinese pragmatism. Ultimately, it seems that two things are required to demonstrate that early Chinese philosophy did have a concept of truth, in Hansen's terms. The first requirement is that a Pre-Qin theory of some kind needs to be identified; and the second requirement is that this theory would need to have a role for truth. Regarding the second point, it is preferable that this role be explicit and relatively free of ambiguity. Note the nature of this positive claim: if I successfully identify both of the above-mentioned requirements, then I will have established that some Pre-Qin philosophy or thinker does have a concept of truth. This is not intended to be (and cannot actually serve as) evidence for the claim that any Pre-Qin thinker or philosophy has a theory of truth.

If Hansen and other scholars (including Van Norden) are correct in stating that truth was central to Chinese philosophical activity (Van Norden 2005, 372), then a lack of theory is unsurprising. Nonetheless, a thinker does not need a theory of truth to have a concept of truth—at least, not according to Hansen’s conceptualization of ‘concept.’ Indeed, given Hansen’s understanding of a concept, any theory that has a role for truth will hold it as a concept; this theory need not be one of truth, even though it is the most self-evident case.

Interestingly, my counter-argument to Hansen instantiates his speculation that, “[h]ad there been a concept of truth, the Mohists would have found it convenient in discussing inference” (Hansen 1985, 510). Interestingly, Hansen himself provides the counter-example to his own argument by using the definition of *bian* (辯) in the Later Mohist “Canons”⁹ in his argument:

Canon 75A: Disputation, is to contend [over] complements.¹⁰ A disputation being won, is to accord.¹¹

Explanation 75A: Some calling this an ox, and some calling it a non-ox, this is to contend over complements. These do not both accord. Not both [being in] accordance, necessarily one does not accord. Not according, like a dog.¹²

Hansen comments that, in this passage:

[*dang* 當] ‘hit-on’ functions roughly like a Chinese term for semantic “satisfaction.” An object satisfies a predicate if the sentence formed by the predicate and a subject term that designates the object is true.... “Is satisfied by” is theoretically close to “is true.” Philosophical use differs mainly in that we use

⁹ The Later Mohist “Canons” are the chapters in the *Mo zi* titled “Jing Shang,” “Jing Xia,” “Jing Shuo Shang,” “Jing Shuo Xia,” “Da Qu,” and “Xiao Qu.”

¹⁰ Graham thinks that *pi* (彼) should be the character *fan* (反) with a human radical (Graham 1978, 318), which would make the line read something like “Disputation is to contend [over] converses.” I am inclined to follow Graham’s emendation because it makes the best sense of the explanation. Calling a debate over ‘a’ or ‘not-a’ or a struggle over ‘that’ makes far less sense than calling it a struggle over ‘converses.’ However, rather than follow him in using ‘converses,’ I use ‘complement.’ ‘Complement’ here is meant in the set-theoretic sense, where the complement of the set of oxen is the set of all non-oxen.

¹¹ 經上: 辯, 爭彼也。辯勝, 當也。

¹² 經說上: 辯: 或謂之牛, 或謂之非牛, 是爭彼也。是不俱當。不俱當, 必或不當。不當, 若犬。

“is true” of sentences and “satisfied” of predicates...[*dang*] (satisfied-by) comes as close to a concept of truth as we would expect. (Hansen 1985, 509)

Hansen’s attempt to deal with this possible counter-example is, at best, weak to the point of triviality and entirely unconvincing:

We are not, however, *required* to treat *tang* (當) ‘hit on’ as a semantic concept. It can still be interpreted in a form that is consistent with the dominant pragmatic emphasis of the other terms of analysis. Instead of associating *tang* with “is satisfied by” we may render it as “is (appropriately) predicable of.” (Hansen 1985, 509. Emphasis in original)

It is easy to see that my earlier rejection of Hansen’s methodological principle of coherence, as well as my embracing of Puett’s call to pluralism, is all the motivation needed to disregard Hansen’s injunction to interpret this passage as pragmatic in order to cohere with “the dominant pragmatic emphasis” (Hansen 1985, 509).¹³ Positively stated, this passage establishes the claim that the Later Mohists have a concept of truth, and also that, at best, it is plausible to assume that other Pre-Qin thinkers may likewise have some concept of truth (which may or may not be similar to the Later Mohist concept).

Even more interesting is that it appears that the Later Mohists may subscribe to a ‘naïve’ correspondence theory of truth. Many scholars, including Harbsmeier and Van Norden, have focused on arguing that there is some truth predicate in Classical Chinese. Van Norden establishes this for the Later Mohists, focusing on the term *ran* (然). He requires a truth predicate in order to support his thin account of truth in Pre-Qin philosophy (which, as noted, is just the deflationary theory of truth). A truth predicate is desirable because it allows us to claim that Chinese thinkers applied (or could apply) truth to sentences. However, the above-mentioned passage from the Later

¹³ Indeed, this demonstrates that Hansen’s interpretation may not actually be the “most plausible” and especially not the “most explanatorily powerful” (Hansen 1985, 493).

Mohist "Canons" indicates that, at least in this instance, truth is a relational term. This further suggests that the Later Mohists may have held some kind of correspondence theory of truth, which either treats truth as a relation between a sentence and a state of affairs (or 'facts') or as a relation between a sentence and the world (there are divergent accounts of the relation). In any case, it is not important to my current argument which theories or concepts of truth are present in Pre-Qin thought. At this point, it is enough to establish that there is some concept (and possibly a theory) of truth.

3.4 Conclusions

Hansen claims that there is no concept of truth in Chinese philosophy (Hansen 1985, 492). It turns out that Hansen's claim rests on his characterization of 'concepts' as being roles in a theory. Roetz criticizes the linguistic aspects of Hansen's claim, but misses the key point of Hansen's argument. Harbsmeier demonstrates that there are words in Classical Chinese that represent truth, but fails to show if any of these words played a role in some Chinese theory. We further saw that Hansen's account commits Van Norden's lexical fallacy. Van Norden's 'thin' account of the truth in Chinese Philosophy, while plausible, is equivalent to the deflationary account of truth and requires more of an argument.

I presented the notion that Early Chinese philosophy has a concept of truth (in Hansen's understanding of 'concept'). The argument is that *dang* (當) plays a role in the Later Mohist definition of *bian* (辯). Furthermore, *dang*, in Hansen's own words, can be interpreted as 'corresponds-to' (Hansen 1983, 106). This being the case, it is clear that *dang* is a relational concept, which supports my claim that the Later Mohists, at the very least, may have had a naïve correspondence theory of truth.

4. The Mass Noun Hypothesis

4.1 Hansen and Mass Nouns

Chad Hansen's theory of Pre-Qin ontology rests heavily on his mass noun hypothesis: "The syntax of Chinese nouns is strikingly similar to that of 'mass nouns' in English" (1983, 32). The syntactic qualities Hansen has in mind are that "mass nouns...do not take pluralization and cannot be directly preceded by numbers or indefinite articles" (1983, 32). The debate over the mass noun hypothesis is confusing, and it often appears that everyone is standing in a field of straw men. While there are several reasons for this conceptual mess, the major problem is that there appears to be no single, clear conception of count nouns, mass nouns, or the count-mass distinction:

Linguists and philosophers who have dealt with the count-mass distinction have found it extremely difficult to stick to their set out criteria. In the count-mass distinction different dimensions of linguistic analysis appear to converge, and it is no coincidence, therefore, that grammatical, ontological, semantic, and contextual matters have frequently been confused. (Joosten 2003, 159)

Without a clear notion of the meaning of 'count noun,' 'mass noun,' or 'count-mass distinction,' engaging in the mass-noun debate or discussing Hansen's mass noun hypothesis is extremely difficult.

4.2 A Review of Criticisms of the Mass Noun Hypothesis

Nonetheless, there are a few key points and criticisms that will help clarify this debate about the mass-count distinction in Classical Chinese. It seems that almost no one accepts Hansen's mass noun hypothesis as it stands, and many prominent scholars have criticized or refined the hypothesis. Harbsmeier (1991) rejects it in favour of his threefold noun distinction, Mou (1999) argues for his collective noun hypothesis, and Robins

(2000) agrees with the hypothesis but refines the argument significantly.¹⁴ However, after reading the accounts of Hansen, Harbsmeier, and Robins, it quickly becomes clear that Quine's (1960) *Word & Object* provides the conceptual context for the mass-noun debate. Therefore, it will be efficacious to briefly outline Quine's conception of mass nouns, as discussed in *Word & Object*. Once the context for the debate is explicated, it will be simple to demonstrate that the entire debate is premised on some rather grievous misunderstandings about mass nouns, their relation to human cognition, and their relation to Classical Chinese itself.

Harbsmeier begins his discussion of mass nouns by noting that they have “no essential link whatsoever with mereology” (Harbsmeier 1991, 51). His argument against the mass noun hypothesis is simply that Graham (via Hansen) does not “inquire whether *ma* ‘horse’ behaves syntactically differently from other common nouns like *shui* ‘water’” (Harbsmeier 1991, 51). His method to counter the hypothesis is to identify “some of the diagnostic syntactic environments that might bring out into the open any grammatical distinction that might exist between count nouns, generic nouns, and mass nouns” (Harbsmeier 1991, 51). Harbsmeier then goes on to provide linguistic evidence for this threefold distinction. This, however, is the first major problem of his criticism. At issue with the mass noun hypothesis is whether or not all Classical Chinese nouns are mass nouns. Thus, turning around and trying to identify the syntactic environments of the threefold distinction begs the question, since Hansen's claim is that Classical Chinese has only one syntactic environment for nouns—the mass one. Moreover, Harbsmeier's introduction of another noun distinction only serves to further confuse the issue, since he

¹⁴ Fraser also has some important comments regarding the mass-noun hypothesis and its relation to Hansen's other claims, but his account of mass nouns in Classical Chinese depends heavily on Robins's account (Fraser 2007, 425). Thus, a discussion of Robins's account is also a discussion of Fraser's.

never clearly explains what a ‘generic’ noun is—only that generic nouns are their own “subcategory of nouns” (Harbsmeier 1991, 55). Nonetheless, Harbsmeier presents one key observation: that quantification is also part of the syntax for nouns. No other scholar thus far has discussed quantification as it applies to contributing to the creation of syntactic environments for the classification of nouns in Classical Chinese.

Mou disagrees with Hansen, arguing:

For a collective-noun hypothesis to the effect that (1) the denotational semantics and relevant grammatical features of Chinese nouns are like those of collective nouns; (2) their implicit ontology is a mereological ontology of collection-of-individuals with part-whole structure and member-class structure, which does justice to the role of abstraction at the conceptual level and which can be given a consistent meta-interpretation in terms of contemporary conceptual resources; and (3) encouraged and shaped by the functions and folk semantics of Chinese nouns, the classical Chinese theorists of language take this kind of nominalist mereological ontology for granted; as a result, the classical. (Mou 1999, 56)

Mou’s account of nouns in Classical Chinese is probably the most perplexing, due to the fact that the “contemporary conceptual resources” he has in mind is Lewis’s mixture of mereology and set theory, as proposed in *Parts of Classes* (1991). Indeed, when reading Mou’s account, one is inclined to agree with Fraser’s criticism that Mou “does not discuss in detail what collective nouns are” (Fraser 2007, 436). This is, perhaps, the only valid criticism that Fraser has against Mou, since Lewis’s system is not motivated by syntax or grammar. Rather, it is concerned wholly with ontology and logic. We can see that Mou does the same thing as Harbsmeier, which further confuses the discussion by introducing another noun distinction. However, Fraser entirely misconstrues the thrust of Mou’s argument, and also misses its reliance on Lewis’s philosophic and mathematical mixture of mereology and set theory. Indeed, Fraser gets the explanatory chain backwards, which becomes clear when he states, “Mou follows Hansen in thinking that

the semantics of Classical Chinese nouns entail a certain sort of mereological view” (Fraser 2007, 437). Contrary to Fraser’s thinking, it seems to me that Lewis’s ontology in *Parts of Classes* has influenced Mou to introduce a new kind of noun on behalf of Classical Chinese.

Robins’s defence of mass nouns in Classical Chinese is probably the most systemic and detailed of all accounts put forth to date. In opening his discussion in his 2000 article “Nature of the Count/Mass Distinction,” Robins writes, “Intuitively, when we use a count noun...we are construing its extension as a collection of individual items, whereas when we use a mass noun...we are construing its reference as an unstructured mass” (148).

Robins suggests three possible ways to distinguish mass nouns and count nouns:

1. Count nouns are, and mass nouns are not, associated with principles of individuation.
2. If, on a particular occasion, a noun divides its reference, it occurs as a count noun on that occasion. If it does not divide its reference, it occurs as a mass noun on that occasion.
3. Count nouns are, and mass nouns are not, associated with structural thresholds. (Robins 2000, 150)

Robins argues in favour of the second way to mark the distinction because it has the virtue of considering how nouns function on a case-by-case basis (Robins 2000, 154).

His summation of the mass noun hypothesis suggests that (1) all nouns in Classical Chinese can function as mass nouns; (2) some (but not all) Classical Chinese nouns can also function as count nouns; and (3) nouns in Classical Chinese, regardless of function, need not be classified as either mass nouns or count nouns (Robins 2000, 155).

The bulk of Robins’s argument is a criticism of Harbsmeier and a discussion about neutral contexts in Classical Chinese (although it should be noted that Robins has no real criticism of Harbsmeier beyond what has already been presented). I mainly disagree with

Robins when he claims that “In neutral contexts all classical Chinese nouns can function as mass nouns and none can function as count nouns” (Robins 2000, 170). Putting aside the dubious conceptual context for Robins’s discussion of nouns (this will be dealt with in the following section on Quine), it is hard to see the purpose of making the claim that nouns in Chinese are not classed as either mass nouns or count nouns, while still claiming that, in neutral contexts, they function only as mass nouns. (Here, ‘neutral context’ for Robins means neutral syntactic context.) The suggestion seems to be that we should interpret all nouns in Chinese as mass nouns, unless indicated otherwise by syntactic clues. Nonetheless, I agree with Robins’s initial conclusion, that “There is no fundamental distinction between count nouns and mass nouns in classical Chinese” (Robins 2000, 183).

Robins’s additional conclusions fall within my general criticisms of the mass noun debate: “Determining how nouns function in neutral contexts is thus essential to any argument either for or against the mass noun hypothesis” (Robins 2000, 170). This statement on its own seems fair enough, except that the only options for noun function seem to be either mass or count. Why it is insufficient to note that Classical Chinese has a class of words that function as nouns in neutral contexts and also in certain syntactic environments. My response to Robins’s claim is that it is enough to know that certain words in Classical Chinese function as nouns; nothing further needs to be determined about this class of words. Of course, I have to shoulder the burden of proof in any case, since it is clear by now that many scholars believe that it is meaningful to enquire into how and where the mass-count distinction is marked in Classical Chinese. I will explore these distinctions in the following section.

4.3 Quine's Theory as a Conceptual Context for the Mass Noun Debate

Quine, in *Word & Object*, explicates his view on mass nouns in the section entitled 'Divided Reference.' Within this section, Quine "imagine[s] the progressive acquisition of terms and auxiliary particles by the child of our culture" (Quine 1960, 125). For Quine, the primary distinction between mass nouns and count nouns depends on whether or not they divide their references, and the second distinction is whether or not mass nouns have a cumulative reference:

Consider 'shoe', 'pair of shoes', and 'footwear': all three range over exactly the same scattered stuff, and differ from one another solely in that two of them divide their reference differently and the third not at all. So-called Mass nouns, additionally, are characterized by cumulative reference: "*mass* terms like 'water', 'footwear', and 'red' have the semantical property of referring cumulatively: any sum parts which are water is water. Grammatically they are like singular terms in resisting pluralization and articles. Semantically they are like singular terms in not dividing their reference. (Quine 1960, 91)

Hansen describes the relation between the mass noun grammar and mereology for Pre-Qin thought by saying that "The differences in the grammar of nouns contributed to the survival of an intuitively natural nominalism in which each graph is taken to name scattered aggregate stuffs or masses" (Hansen 1983, 37). He also notes that "To see how masslike nouns contribute to mereology, consider how they function as terms or individual constants.... This makes it natural to regard the mass nouns as logically singular terms" (Hansen 1983, 35).

It should be immediately apparent that Quine's understanding of mass nouns provides the conceptual context for Hansen's account of nouns in Classical Chinese. The parts of Hansen's hypothesis that do not rely on Quine (i.e., that mass nouns are terms for mereological wholes which are understood as individuals) can be found in the work of

Goodman.

This conceptual context itself, however, is subject to criticism. While Hansen never claims that mass noun acquisition precedes count noun acquisition, his belief that mereological ontology is reasonable for Chinese thinkers partially relies on the primacy that Quine attributes to the acquisition of mass nouns “The category of mass terms...[are] that archaic survival of the first phase of language learning” (Quine 1960, 121). Thus, it is clear that Quine thinks that mass nouns make up the most basic category of words. Quine also seems to think that, in acquiring language, we also acquire the ability to group and discriminate our sensory experience, and that pre-linguistic children experience the world as a sensory continuum (e.g., Quine 1960, 80-81). Indeed, Quine goes so far as to suggest that all nouns acquired during this initial stage of language learning can be conceptualized as mass nouns, noting that “Occasions eliciting ‘mama’ ...[are] just as discontinuous as those eliciting ‘water’, the two terms had been on a par” (Quine 1960, 95).

Hansen adopts a slightly different view about the acquisition of the English language, commenting that English speakers abstract and generalize from particular instances to general properties (Hansen 1983, 52). What is even more interesting is that he attributes Quine’s theory of language acquisition to Chinese children (Hansen 1983, 52). The combination of Quine’s influential views on mass nouns and language acquisition with Hansen’s mereological views leads to the somewhat disturbing conclusion that Hansen is indirectly implying that Chinese people have, at best, the mental capacity of infants in Western cultures. Indeed, as Hansen forthrightly admits that Quine has influenced his thought, this conclusion does not seem entirely unjustified

(Hansen 1985, 420). Of course, Hansen does not actually intend to say outright that Chinese people have the mental abilities of Western infants; still, he does imply that Chinese people remain at stage one of Quine's theory of language acquisition. This also explains why Hansen feels that the mereological view is both reasonable and explained by mass nouns. Quine claims that at stage one, nouns for English speakers are either mass nouns or singular terms—which is precisely how Hansen characterizes the situation for Pre-Qin thinkers (Hansen 1983, 35).

By illuminating how Quine's theories of language acquisition and mass nouns provide the context for Hansen's mass noun hypothesis allows us to see why Hansen was so convinced by Quine's argument. It also explains how other scholars have failed to see a relation between mass nouns and ontology that is not characterized by linguistic determinism (Hansen has repeatedly denied that linguistic determinism motivated his hypothesis). Indeed, when understood in this light, the structure of Hansen's argument becomes far more intelligible. Most scholars understand Hansen as using the mass noun hypothesis as a premise in his argument for mereology. Rather, it seems that the mereological theory is motivated by a different set of observations, while grammatical features of Classical Chinese motivate the mass noun hypothesis.

Thus, Hansen's argument is structured so that “the grammatical parallels between English mass nouns and Chinese nouns give initial plausibility to the hypothesis that...this rudimentary mereology was indeed the model that informed their semantic theories” (Hansen 1983, 35). The mereological and mass noun theories go hand in hand, rather than one necessitating the other (for it could easily be said that mereological ontology helps explain why nouns in Classical Chinese are grammatically similar to mass

nouns in English). This interpretation of Hansen's argument seems even more reasonable when his methodology is taken into account, since his methodology advocates coherence. Thus, the quality of his interpretation is to be judged based on its ability to create a coherent web of ideas—which is precisely what he does create. However, the problems with this methodology have already been indicated, and it can now be shown that the context which allows for an intelligible articulation of his argument is itself faulty, casting doubt on the mass noun and mereological theories.

4.4 Cognitive Science and Mass Nouns

Quine does not provide evidence supporting his beliefs about how children conceptualize the world or how they acquire language (which is only reasonable, since Quine's purpose in *Word & Object* is not to provide a theory of language acquisition). It can be seen from many studies in cognitive science that Quine's accounts of language acquisition and how children conceptual the world are wrong. A quick review of some relevant studies in cognitive science will demonstrate that neither the context for Hansen's mass noun hypothesis, nor the assumptions that his mereological ontology is based on, are supported by empirical data.

Rosch et al.'s article (1976) "Basic Objects in Natural Categories" was motivated by a desire to disprove a theory of language acquisition that claims categories are arbitrarily formed from the continuum of 'stuff' that we perceive in the world (383). This view, then, seems to imply that learning language actually alters our perception of the world: we perceive distinct things as adults because we learned language. Of course, Rosch et al. do not, in this study, assert the contrary to the contemporary belief that language shapes or determines our perception of the world (i.e., that our perception of the

world shapes or determines language in some non-trivial way). They do, however, state that “The perceived world is not an unstructured total set of equiprobable co-occurring attributes”; rather, “The material objects of the world possess a high correlational structure” (Rosch et al. 1976, 428). It is not the case that sensory information from the world presents itself as one whole to us. Neither is it the case that any distinctions drawn within this whole are entirely linguistically based. Thus, it can be seen that Quine’s theory of language acquisition is not supported by empirical data.

Samuelson and Smith’s article (1999) “Early Noun Vocabularies: Do Ontology, Category structure and Syntax Correspond?” is “specifically concerned with young children’s understanding of the different category organizations of objects versus substances” (2). The article’s concluding discussion posits three possibilities regarding the relation between naming and individuation: (1) that individuation and the concept of ‘object’ are tightly related, and that objects have developmental priority over substances; (2) that individuation and the object-substance distinction are linked to perception, and are well formed in early infancy and prior to word learning; and (3) that individuation and perception are not closely related (Samuelson and Smith 1999, 30). However, the study’s data only support the first two possibilities, although they do not contradict the third. What is important for the purposes at hand is that possibilities one and two both demonstrate that Quine is wrong about how children perceive the world and how they acquire language. It turns out that learning count nouns, as well as object individuation, precedes the learning of mass nouns and substances. Indeed, the second possibility goes so far as to say that the object-substance distinction exists even before language. Such a view damages Hansen’s argument considerably, since this possibility suggests that it is

more reasonable to believe that Chinese thinkers have a clear, non-linguistically determined understanding of the object-substance distinction.

Imai Matsumi and Dedre Gentner article (1997), “A Cross-Linguistic study of Early Word Meaning: Universal Ontology and Linguistic Influence,” helps to determine which of the above possibilities is most likely. With their research in mind, it turns out that the second possibility is the most plausible understanding of the object-substance and mass-count distinctions. Imai and Gentner conducted this study “to assess whether ontological knowledge indeed guides early lexical acquisition before learning *linguistic* categories of individuals and non-individuals” (Imai and Gentner 1997, 175). However, his study was a cross-cultural comparison between mono-linguists of Japanese and English.

Furthermore, because all Japanese nouns require a classifier and do not pluralize, it shares exactly the same grammatical features that motivate Hansen’s mass noun hypothesis; therefore, this is the perfect study to assess the empirical validity of Hansen’s claims.

The goal of the study was to determine “[i]f the distinction between objects and substances is innate or very early, as suggested by the universal ontology view,” and if so, “then the youngest children will look quite similar across the two language groups.” The study also sought to validate the truth of the opposing view, which Hansen advocates: “If the distinction between count terms and mass terms must be learned from language, than there should be language-specific word meaning extensions from very early on [and so] Japanese children will make no distinction between objects and substances, reflecting the lack of the object/substance distinction in their language” (Imai and Gentner 1997, 177). In the end, their results turned out in favour of the first view: “There is evidence for the universal use of ontological knowledge in individuation

independent of language,” since the mono-lingual speakers of both Japanese and English generalized equally well with objects and substances (Imai and Gentner 1997, 188). Thus, it can be hypothesized that speakers of a language like Chinese (e.g., Japanese, in the case of nouns) also have a clear, non-linguistically based understanding of the substance-object distinction.

Interestingly, the study also indicated that language had a strong effect on the conceptualization of simple objects (Imai and Gentner 1997, 188). However, this effect is contrary to Hansen’s theory. Hansen believes that, for users of a language with characteristics like Chinese or Japanese, all objects are best understood to represent mereological wholes (Hansen 1983, 52). If this theory were correct, then in cases where there is no “linguistic apparatus for marking the two ontological categories,” the subjects of the test should have tested above chance with a preference for substance. However, this was not the case (Imai and Gentner 1997, 188). Rather, the subjects scored at chance, showing no preference for either substances or objects (Imai and Gentner 1997, 188). If it were the case that they generally function as mass nouns, than the subjects of the test should have scored above chance, with a preference for substance.

Imai and Gentner conclude that there is a universal ontology independent of language (1997, 188) and that language does indeed influence our ontological knowledge (1997, 196). Imai qualifies this apparent contradiction by noting that:

Japanese speakers and English speakers appeared to use different criteria in determining the class membership for a given instance, suggesting that they have a different representation for, or at least a different boundary between, individuals and non-individuals. This is not to suggest that the notion of individual is incommensurably different across the speakers of the two languages. We assume that it largely (perhaps mostly) overlaps. (Imai and Gentner 1997, 195)

The question regarding the cultural or linguistic differences that language creates focuses

on where the boundary between objects and substances is drawn—not on whether or not such a boundary exists. Thus, the only plausible ontology for any culture is one that includes both objects and substances—one that has both mereological wholes and classes. Unfortunately, until someone completes a study with speakers of Chinese, the most Imai and Gentner’s study can demonstrate is: (1) the empirical implausibility of Hansen’s account of the grammar of nouns in Classical Chinese; and (2) the plausibility that Chinese nouns are grammatically neutral regarding the count-mass distinction.

Interestingly, there is an earlier study by Peter Gordon (1985), “Evaluating the Semantic Categories Hypothesis: The Case of the Count/Mass Distinction,” that verifies the opposite of Imai and Gentner’s study and provides additional support for the second conclusion noted above—namely, that “The count/mass distinction is *essentially* syntactic but not *exclusively* syntactic” (Gordon 1985, 221). Imai and Gentner’s study concludes that there is a non-linguistic, universal perceived ontological distinction between substances and objects, while Gordon’s study concludes that the count-mass distinction is an essentially syntactic affair.¹⁵ Gordon’s conclusion supports Imai and Gentner’s contention that Japanese speakers do not need a linguistic count-mass distinction in order to possess a substance-object distinction. Gordon’s study also demonstrates that in the absence of relevant syntactic cues, as in Japanese or Chinese, it could be claimed that there is no count-mass distinction. Indeed, according to Gordon,

¹⁵ At some points it seems that the two studies contradict each other: Imai claims that the universal, non-linguistic substance-object distinction informs language learning, while Gordon concludes that the substance-object distinction is not important for learning the count-mass distinction. However, it is the case that these two studies support each other: Gordon never claims that infants do not recognize a substance-object distinction, only that this distinction is not directly connected to the linguistic categories of mass and count nouns.

syntax is a necessary (but insufficient) cause for the count-mass distinction. Thus, without the appropriate syntactic cues, there can be no such distinction.

4.5 Conclusions

Based on similar syntactic characteristic between mass nouns in English and nouns in Classical Chinese, Hansen argues that all Chinese nouns are mass nouns (Hansen 1983, 32). Harbsmeier demonstrates that there are syntactic environments for his threefold noun distinction (mass, count, and generic nouns). His criticism, however, begs the question and muddies the water by introducing (without explaining) ‘generic’ nouns. Mou disagrees with Hansen and uses Lewis’s mereological set theory to argue for a collective noun hypothesis. Mou’s account fails mainly due to a lack of clarity surrounding the nature of ‘collective nouns.’ Robins claims that nouns in Chinese are neither classed as mass nor count, but they function primarily as mass nouns. This account mainly fails due to the somewhat *ad hoc* conclusion that although nouns are unclassified their function is still mass.

The conceptual context of the mass noun debate that Quine provides turns out to be the biggest problem. Evidence from cognitive science shows that the mass-count distinction is a primarily syntactic affair; therefore, if there is no syntactic distinction between nouns, the correct conclusion is that there is no mass-count distinction and that not all Chinese nouns are mass nouns. Furthermore, other evidence from cognitive science demonstrates the implausibility of Quine’s theory of language acquisition. Other cognitive science evidence demonstrates that there is possibly a universal (and non-linguistically based) understanding of the object-substance distinction. Ultimately, it turns out that Hansen’s mass noun hypothesis is not supported by empirical data, and that the

entire debate over noun classification in Classical Chinese depends on an implausible theory of language acquisition.

5. Nominalism

5.1 Nominalism According to Goodman and Hansen

“Nominalism,” according to Goodman, “consists of the refusal to countenance any entities other than individuals” (Goodman 1966, 37). The logical motivation for Goodman’s ‘calculus of individuals’ is that “Use of the calculus of classes, once we have admitted any individuals at all, opens the door to all classes, classes of classes, etc. ... Recognition of this fact will give pause to anyone who finds the notion of classes and other nonindividuals essentially incomprehensible” (Goodman 1966, 35–36). In other words, nominalism is motivated by a desire to exclude classes from one’s ontology. Furthermore, this position (at least as elucidated by Goodman), is the opposite of Platonism (Goodman 1966, 37).¹⁶ There is one further clarification that will give further context to Hansen’s discussion of the topic, namely that “The nominalist countenances only individuals but may take anything as an individual” (Goodman 1966, 39).

The nominalist aspect of Hansen’s argument is likely the least well understood, and rightly so, as his discussion is confusing and suffers from a lack of consistently-applied terminology. In *Language and Logic in Ancient China*, he writes:

Behavioral nominalism captures both “negative”¹⁷ features of the philosophical perspective of Chinese thinkers. I use *behavioral* because, in the place of internal mental representations of particulars and properties, the Chinese view of mind (heart-mind) is dynamic; the mind is the ability to discriminate and distinguish “stuffs” and thereby to guide evaluation and action. I use *nominalism* because the Chinese philosopher is not committed to any entities other than names and objects. There is no role in Chinese philosophical theories like that played by terms such as *meaning*, *concept*, *notion*, or *idea* in Western philosophy. (Hansen 1983, 31)

¹⁶ While Goodman only formulates this argument opposite that of Platonism, he would probably also find fault with the stance of the metaphysical realism so strongly advocated by David Lewis.

¹⁷ The “positive” aspect of Hansen’s interpretive theory is the mereological thesis for Chinese ontology, which is covered in Section 6.

This paragraph represents a relatively dense locus of ideas that Hansen never explicates in any complete or satisfactory manner. The clearest way to demonstrate that behavioural nominalism is an insufficiently explained aspect of Hansen's argument is to look at the footnote Hansen provides for the term:

I am tempted to find strong similarities between modern nominalism and the Chinese version, but of course the ways of expressing the view differ radically... Chinese nominalism, if I am right, was not a philosophical position against abstractions and mentalism, but just a tradition that never was even grammatically tempted to conceive of a world of abstract objects. (Hansen 1983, 175: fn 2.1)

This last comment in the above excerpt demonstrates how much of Hansen's arguments are influenced by the 'blank slate' view of the mind. Nonetheless, the statement suggests and operates within an understanding that there is a direct correlation between language and thought—something we have good reason to believe false.

Moreover, given the earlier discussion of Goodman's conceptualization of nominalism (which Hansen does reference in his 1975 article), it should be clear that Hansen's account diverges in some rather important ways from Goodman's. The first, and most substantial, divergence is that Goodman's account does not automatically exclude abstract individuals. Indeed, Goodman might even be willing to recognize that the mereological construal of 'dog' as a discontinuous whole scattered in space-time could be considered a highly abstract application of the word 'individual.' In any case, the important point is that Goodman's nominalism neither excludes abstract individuals nor commits the nominalist to mereology. We can also see that the 'behavioural' aspect of Hansen's conceptualization of nominalism is what makes this nominalism a 'Chinese' (and not quite Western) theory. At the same time, we can see what originally drew

Hansen to nominalism in the first place, which is that it is a philosophical response to both Platonism and classes—two things that Hansen denies have any presence in Chinese philosophy.

5.2 Criticism of Hansen’s Theory of Nominalism in Chinese Thought

Examining the critical responses from other scholars is beneficial for making some sense of the nominalist claim. Bao zhi-ming construed behavioural nominalism as a claim that there are no abstract entities in Pre-Qin thought (Bao 1987, 419). He then goes on to demonstrate both that Classical Chinese is capable of expressing abstraction, and that it contains abstract objects. While these are valuable aspects to demonstrate regarding Classical Chinese or Chinese thought, it misses Hansen’s point that Chinese philosophers are not *committed* to abstract entities. This means we have no reason to assume that abstract entities play an important role in Chinese ontology: “Since the non-abstract theories explain the texts more coherently, I accept them. Accepting them, I assert that the texts in question did not discuss abstract or conceptual objects. It is an interpretive claim, not a grammatical one” (Hansen 1985b, 423). Thus, Hansen’s interpretation leaves room to claim that Classical Chinese can, and probably did, express abstractions. A reiteration of an earlier point will serve us well here: coherence is not an acceptable guide for determining the relative worth of an interpretation. Nonetheless, Bao’s criticism and Hansen’s response make it clear that, in the context of the argument, the only way to disprove Hansen’s interpretive claim is to (1) find an example where an abstract theory coherently explains the texts, and (2) identify a Pre-Qin theory where abstraction (or some abstract object) plays a non-trivial role.

One important defence of Hansen's nominalistic thesis for Pre-Qin thought is Fraser's 2007 article. In many ways Fraser's article updates, clarifies, and clears away many of the conceptual problems present in Hansen's *Language and Logic in Ancient China*. Nonetheless, it can still be seen that the nominalism presented on behalf of Chinese thinkers is still quite different from Goodman's (or even Quine's). Fraser writes, "Early Chinese philosophy of language is nominalistic, in that it is not committed to recognizing any entities other than words, or 'names' (*ming* 名), and the things that form their extensions" (2007, 421). He further notes, "A mereological worldview is not the primary motivation for early Chinese nominalism" (Fraser 2007, 440). Indeed, Fraser is quick to note that mereology does not necessitate a 'stuff ontology' (2007, 422). It should be immediately clear that a nominalism committed only to 'names' and a nominalism committed only to individuals are two different things entirely. In some ways Fraser's separation of stuff ontology from nominalism places him in the realm of Lewis's mereological set theory. Nonetheless, Fraser's comments do remind us that mereology is primarily about the part-whole relation, although there is some leeway regarding what counts as a whole.

However, by stepping away from Goodman's nominalism, Fraser's argument becomes far more dependent on linguistic factors than he realizes. Removing the stuff ontology from the motivation for nominalism means that Fraser's account relies entirely on the construal of all Classical Chinese nouns as being mass nouns. Alternatively, if it does not rely on the mass noun hypothesis, then it is unclear to what extent it is meaningful to claim that Early Chinese thinkers were committed to names alone. Fraser's argument that the Later Mohists were nominalists partially rests on the claim that "They

hold the nominalist view that things are instances of a kind by virtue of being similar” (Fraser 2007, 439). A claim like this makes one wonder about the foundations of similarity in Later Mohist thought. Fraser writes, “The Mohists explain the relevant similarity relations by brute similarity between particulars and by the practice of comparing things to a model or paradigm. Xunzi explains them by the inherent tendency of animals of the same species, having the same sense organs, to perceive things similarly” (Fraser 2007, 440). However, Fraser fails to consider the possibility that similarity is an abstract notion in the Later Mohist and Xunzian theories.

5.3 Similarity In Xunzi’s Thought

While I might be willing to grant that perhaps the Later Mohists and Xunzi do not “appeal to meanings, abstract concepts, essences, universals, or Platonic forms to explain the relation between a thing and its kind,” a significant deficiency in Fraser’s argument is that he does not fully explore the nature of the similarity relation within Later Mohists and Xunzian philosophy (Fraser 2007).¹⁸ Fraser treats similarity as if it were a perfectly clear notion. This likely finds some support in his claim that Xunzi’s similarity relation is partially based on appearance (or physical characteristics). Indeed, we can likely assume that what Fraser means when he refers to ‘brute similarity’ is physical similarity. The argument that Fraser seems to be making is that similarity (*tong* 同) serves the same explanatory role in Pre-Qin philosophy as meanings, essences, universals, or Platonic forms do in Western philosophy. Moreover, if it does serve the same explanatory role, then it has all the inherent faults that meanings, essences, universals, or Platonic forms do.

¹⁸ Fraser claims that the account is beyond the scope of his article (Fraser 2007, 440). However, given how much of his nominalistic claim rests on the similarity relation, even a cursory discussion was certainly within the scope of his discussion.

Namely, these terms are generally faulted for being vague or requiring unsavoury ontological commitments.

Similarity in and of itself is too vague a notion to provide any guidance (unless it goes beyond the physical). Indeed, we live in a world where only identical twins are physically identical (although there are even some physical differences between identical twins). If this is the case, are there any two objects similar enough to support the sort of inductive generalization that Fraser attributes to Xunzi (Fraser 2007, 440)? Even within the paradigm of perceptual categories (like colour), there is evidence that perceptual similarity is an insufficient basis for categorization (or for the sort of instance-to-kind inductive generalization that Fraser attributes to Xunzi).

Roberson et al. published a study where they tested the categorization capabilities of an aphasic patient with naming difficulties (particularly colour naming difficulties) (1999, 6). Due to the subject's difficulty in explicit categorization tasks, they conclude the article by noting, "[The subject] has implicit access to the relevant information to make these categorisations but without language has only explicit recourse to similarity judgments that, by themselves, cannot be used to form categories" (Roberson et al. 1999, 42). Of course, one important difference in Fraser's account is that he is explicating the instance-kind relation and not the member-category relation. (However, a separate argument can be made that there is no difference in the two when discussing perceptual categories and living kinds/classes, for cognitive science literature usually does not differentiate between the notion of living kinds and classes.) Nonetheless, the sort of inductive generalization that Fraser attributes to Xunzi is not plausible on a perceptual basis alone. Thus, Xunzi's theory requires an entirely different argument.

Is it possible that Xunzi has some notion that physical similarity would be insufficient for inductive generalization? Moreover, is there any plausible interpretation of Xunzi that works against Fraser? Perhaps the first thing to do when re-evaluating Xunzi's theory of similarity and difference is look at the evidence. Fraser refers to a part of the "Rectification of Names" chapter from the *Xun zi*, presented in its entirety below:

[1] If so, then how [do you] discover and use similarity and difference? It is said: "by the heavenly organs." In all cases where those that [name] a similar species or nature, the intended object of its heavenly organ is considered the same. Therefore, compare the places where it is doubtful or similar and work through it. Physical forms, colours, and patterns are distinguished by the eyes. Voices and sounds being clear or muddy, the key of the *Yu*, and odd sounds are distinguished by the ear. Sweet, bitter, salty, bland, pungent, sour, and strange flavours are distinguished by the mouth. Fragrant, odiferous, sweet, extra fragrant, fishy, urea, acrid, and strange odours are distinguished by the nose. Pain, itchiness, cold, hot, smooth, rough, light, and heavy are distinguished by the body. Speech, reasons, delight, anger, sorrow, joy, love, hate, and desire are differentiated by the heart-mind. The heart-mind also has overall knowledge.

[2] Overall knowledge, then, is to enquire into what is heard and thereby know the appropriate sound; it is to enquire into what is seen and thereby know the appropriate form. If it is thus, overall knowledge will necessarily take the correspondence of the heavenly organs [to their objects] before noting [the object's] class. Only then will it be correct. If the heavenly organs note [objects] but do not know them and the heart-mind comprehensively knows [an object] but cannot explain it, then anyone who is like this is considered not to know [the object]. This is the origin of how we [consider things] similar or different. Only when this is followed can you name things.¹⁹ [My translation]

This rather long extract has been divided into two parts for easier explication. Fraser's discussion of the passage focuses on the first part and it perfectly supports his interpretation that similarity is about physical characteristics for Xunzi. However, the

¹⁹ 然則何緣而以同異？曰：緣天官。凡同類同情者，其天官之意物也同。故比方之疑似而通，是所以共其約名以相期也。形體、色理以目異；聲音清濁、調竽、奇聲以耳異；甘、苦、鹹、淡、辛、酸、奇味以口異；香、臭、芬、鬱、腥、臊、漏廂、奇臭以鼻異；疾、癢、滄、熱、滑、鉞、輕、重以形體異；說、故、喜、怒、哀、樂、愛、惡、欲以心異。心有徵知。徵知，則緣耳而知聲可也，緣目而知形可也。然而徵知必將待天官之當簿其類，然後可也。五官簿之而不知，心徵知而無說，則人莫不然謂之不知。此所緣而以同異也。然後隨而命之。

second part suggests that there is something more to similarity than just physical characteristics.

In the second part Xunzi explains what he means by ‘overall knowledge.’ It is quite clear that Xunzi creates a mild form of dualism for the *xin* (心) “heart-mind.” In many ways, this passage is a stereotypical instance of *xin* as both ‘heart’ and ‘mind.’ The ‘heart’ function serves to differentiate emotions and the ‘mind’ function serves the purpose of ‘overall knowledge.’ Moreover, if we look more closely at the metaphor Xunzi is using in this passage to describe the ‘heavenly organs’ we begin to notice that he is also creating a hierarchy between the sensory organs and *xin*: Xunzi uses *guan* (官) as the word for ‘organ’ but its basic meaning is “official.” While it could be argued that Xunzi’s word choice is incidental, a key phrase from the second part makes it clear that Xunzi purposefully chose this metaphor: “然而徵知必將待天官之當簿其類” (“If it is thus, overall knowledge will necessarily take the correspondence of the heavenly organs [to their objects] before noting [the object’s] class”). The word *bo* (簿) is generally used as a verb to indicate the recordkeeping by bureaucratic officials. There are many other words Xunzi could have chosen to express the same notion but his choice here reflects the metaphoric or conceptual domain that he had in mind.

It is the inherent duality combined with the hierarchical arrangement of these ‘sensory officials’ that makes it very clear that classification is a two-step process for Xunzi. Moreover, it is a two-step process that involves some kind of similarity that goes beyond physical characteristics. If what the eyes see was enough to determine similarity, then no higher level of explicit cognition (as perceived by the heart-mind) would be necessary. Rather, we would always implicitly know which colours are similar or

different, and it certainly would not require *explanation* (as claimed in the second part of the excerpt above). Of course, it is difficult to determine which parts of Xunzi's argument are intended to be descriptive and which are intended to be normative. However, this does not actually matter, since both Fraser and Hansen claim that Pre-Qin thought was nominalistic by virtue of not using “meanings, abstract concepts, essences, universals, or Platonic forms” (Fraser 2007, 440).²⁰

5.4 *Shi* (實) as ‘Innate Potential’ and as Analogous to ‘Essence’ in Cognitive Science and Folkbiology

If we continue reading Xunzi's account of similarity and difference, we encounter a term that seems to play the same role as the Western concepts that Fraser and Hansen believe are absent in Chinese philosophy:

If [things] are similar then group them; if they are different then distinguish them. If unit names are sufficient to be used for distinguishing then [use] unit names. If unit names are insufficient for distinguishing then [use] compound names. If unit or compound names lack that which is mutually avoidable then [use a] general name. Although [they] are general, they cause no harm. Knowing the different names of different *shi* makes all different *shi* have different names, and they cannot be disordered. It is similar to causing similar *shi* to have the same name.²¹ [My translation]

The key term in this passage—‘substance’ (*shi*, or 實)—is introduced towards the end.

Later on in the chapter, Xunzi writes, “Names being heard and their *shi* (實) being known is the function of names” (“名聞而實喻，名之用也”). Fraser translates or understands *shi* as ‘stuff’ (Fraser 2007, 440). However, I am not alone in observing that names in Pre-

²⁰ However, part of Hansen's argument is that Pre-Qin thought is pragmatic (by which he means they only discuss language in relation to its users). This extract from Xunzi also seems to stand as a counter-example to that claim since, by Fraser's argument, similarity is a language-to-world relation (that is, similarity is an independent and perceptible quality inherent in the appearance of objects).

²¹ 同則同之，異則異之。單足以喻則單，單不足以喻則兼；單與兼無所相避則共；雖共不為害矣。知異實者之異名也，故使異實者莫不異名也，不可亂也，猶使同實者莫不同名也。

Qin philosophy (as well as in later periods) relate to *shi*. Indeed, this makes perfect sense, since applying names to *shi* (and not to individual objects) is the only way for the same name to apply to numerous individual things.

Robins provides an interesting discussion about the differences between *shi* and *wu* (物): “The major difference between *shi* (實) ‘reality’ and *wu* (物) ‘thing’ is that the former seems particularly suited to contexts where the reality is being contrasted with what is said about it.... *Shi* (實) ‘reality’ divides its reference into individuals, into kinds, and into realities that are neither individual nor generic in any obvious sense” (Robins 2000, 169). While this gives the appearance of clarifying the concept of *shi*, it actually does nothing to help us understand either what it means or what function it serves in early Chinese thought. According to Fraser, the fact that *shi* can divide its reference into so many different scopes simply indicates that *shi* really is a gravely under-researched concept in early Chinese thought.

John Makeham has one of the more detailed investigations of *shi* in *Name and Actuality in Early Chinese Thought* (1994). While the focus of the book is on the name-*shi* relation and understanding in one early Han dynasty text, Makeham does study earlier understandings of *shi* in order to provide the context for his discussion and research. Makeham writes, “[Xu Gan’s] concept of ‘actuality’... [can be understood] to be ‘a state of development peculiar to an entity or state of affairs by virtue of which that entity or state of affairs is what it is’. In order to distinguish this use of *shi* from its common pre-Qin sense as ‘particular object,’ I translate it as ‘actuality’” (Makeham 1994, 7).

Interestingly, I happen to agree with Makeham’s interpretation of *shi*, although it would have been more succinct to simply call it the ‘essential innate potential’ of any

given object. Where I disagree with Makeham is in the historical separation of *shi*'s two meanings of 'innate potential' and 'object.' I also disagree with Makeham's conclusion that *shi*'s basic meaning is 'particular object' rather than 'fruit.' Makeham suggests that the historical progression of the term occurred in the opposite direction, with the more conceptual and abstract understanding of *shi* informing the later meaning of 'fruit' (Makeham 1994, 8). At this point, it is sufficient to note that my interpretation of *shi* as 'innate potential' is accurate (at least during the early Han dynasty).

The plausibility of my suggestion that Makeham's interpretation of *shi* is accurate of the Pre-Qin and early Han understandings is best demonstrated by juxtaposing two quotations:

There are times when the sprout does not flower and there are times when it flowers but does not bear fruit [*shi*].²² [My translation]

and

Names are bonded to actualities just as plants are bonded to the seasons. In spring, plants blossom into flower, in summer, they are covered in leaves, in autumn their foliage withers and falls, and in winter they produce seeds. (Makeham 1994, 8–9)

Both of these passages seem to be operating within the same metaphorical and conceptual domain in their use and understanding of the term *shi*. The first example was taken from the *Analects*, and the second from the writings of Xu Gan. Indeed, it would seem to be fairly standard to understand *shi* in a botanical context. Of course, the fact that the first example is intended to be metaphorical is implicit rather than explicit (as in the second example).²³ Nonetheless, the similarity of these passages suggests that Makeham's

²² *Analects* 9.22: “苗而不秀者有矣夫！秀而不實者有矣夫！”

²³ No further context is given in the first example. Thus, it is up to the reader to infer some metaphorical meaning to the passage, because it would be strange for Confucius to make a straightforward agricultural statement (as would be required by a literal interpretation of the passage). While nothing about the context

interpretation of *shi* is accurate of writings as early as the *Analects* (the Late Zhou or Early Warring States periods).

Makeham is probably incorrect about the historical progression of *shi*'s meanings as progressing from 'inner substantiality' to 'fruit' to 'particular object' (Makeham 1994, 7–8). It was originally my intention to argue that both meanings were present early in Chinese history, but my very cursory search of the *Shi jing* turned up three distinct odes using *shi* literally as 'fruit' and no uses of *shi* as a noun meaning 'inner substantiality':²⁴

1. Solitary stands the russet pear tree / With its fruit so bright.²⁵
2. The peach tree is young and elegant / Abundant will be its fruits.²⁶
3. Dropping are the fruits from the plum-tree / There are but seven of them left!²⁷

Given that the *Shi jing* is among the earliest Chinese texts, it is implausible that the interpretation of *shi* as meaning 'fruit' was a later development, since it would be extremely difficult to establish or find texts pre-dating the *Shi jing* that are likely to use *shi* to mean 'inner substantiality.'

However, it seems that Makeham is correct about *shi* meaning 'particular object,' especially during the late Warring States period, as evidenced by its use in the *Xun zi*:

Some things have similar forms and [occupy] different places, and some have different forms and [occupy] the same place. [These situations] can be distinguished. [The case where things have] the same form but occupy different places, although they can be considered related, we consider them two *shi*. Those things whose form changes and whose *shi* is unchanged, yet are considered different, call this 'change.' To have change without being considered different, this

bars a literal interpretation, such an interpretation leaves one wondering why an ordinary statement like this would be included in the *Analects*. In either case, even if a literal interpretation is best, it still works against Makeham's claim that *shi* as 'fruit' is a later development of the more abstract meaning.

²⁴ Both the translation and Chinese text for the *Shi jing* are taken from <http://chinese.dsturgeon.net>. In turn, Donald Sturgeon took the text and translations from Legge 1898. These three translated excerpts are adapted from Legge's translations.

²⁵ 有杕之杜、有暎其實。"Di Du," Decade of Lu Ming, Xiao Ya chapter.

²⁶ 桃之夭夭、有蕢其實。"Tao Yao," Odes of Zhou and South chapter.

²⁷ 標有梅、其實七兮。"Piao You Mei," Odes of Zhao and South.

is considered as being one *shi*. This is the method to check substances and fix numbers.²⁸ (*Xun zi*, “Zheng Ming” chapter) [My translation]

Makeham interprets this passage as an indication of Xunzi’s understanding of *shi* as ‘particular object.’ However, considering one of the statements—namely, “[t]hose things whose form changes and whose *shi* is unchanged, yet are considered different, call this ‘change’”—it seems rather clear that *shi* is an internal quality (and not an external one). Moreover, this passage suggests to me that Xunzi had a robust notion of *shi* as ‘essence’ or ‘innate potential,’ since *shi* is used both as an individuating principle, as well as the principle for grouping objects together—which is exactly the function that essences serve in cognitive science. This is evident when one remembers that our discussion of what *shi* means was sparked by Xunzi’s use of the term for the basis of similarity and difference.

It has quickly become apparent that working out the precise nature of *shi* and its development as a concept in Pre-Qin thought is a complicated task beyond the scope of this thesis. Nonetheless, we can draw three worthwhile conclusions from this discussion: (1) the scholarly focus on the theories in naming in Early Chinese thought have done us a disservice by not paying greater attention to this key concept; (2) the basic meaning of *shi* is ‘fruit,’ and it later comes to be metaphorically extended to mean ‘innate potential’; and (3) *shi* (at least in Xunzi’s thought) seems to serve the exact role that essences, Platonic forms, ideas, meanings, etc., do in Western thought; thus, *shi* can plausibly be interpreted as the Pre-Qin notion that explains how the one is related to the many.

The last two conclusions provide the initial motivation for identifying an alternative to the nominalistic interpretation of Chinese thought. Indeed, there is a context for

²⁸ 物有同狀而異所者，有異狀而同所者，可別也。狀同而為異所者，雖可合，謂之二實。狀變而實無別而為異者，謂之化。有化而無別，謂之一實。此事之所以稽實定數也。此制名之樞要也。後王之成名，不可不察也。

interpreting *shi* that is both empirically feasible and does not require attributing any type of unwarranted ontological commitments to Pre-Qin thinkers. This context is the cognitive science theory of psychological essentialism (also simply referred to as ‘essentialism’ in the literature). However, it should be clear that psychological essentialism is very different from the philosophical theory that every object possesses an essence unique to it. Rather, psychological essentialism is defined as “the psychological belief that certain kinds of objects or substances have something like a constitutive yet unknown essence” (Gelman and Wellman 1991, 216). It should be immediately clear that I am offering this as a supplement to Hansen’s theory of behavioural nominalism, for they are not mutually exclusive. This definition of psychological essentialism fully fits within Hansen’s notion of pragmatism in Early Chinese thought. It even fits into his notion that no abstract concepts play a role in Chinese theories about language, since psychological essentialism is about our attitudes and behaviour towards objects, and is not an ontological theory about objects themselves. (Notably, much of the evidence for essentialism in our cognition of categories and objects is taken from studies involving children, who generally have no theories about philosophically-defined essences.)

Gelman and Wellman’s 1991 article, “Inside and Essences: Early Understandings of the Non-obvious,” which outlines how psychological essentialism applies to our reasoning about categories, has particular relevance to this discussion of the possible interpretation of *shi*. The purpose of their study was to test whether or not young children only attend to physical appearance when reasoning about categories, and also to gauge if non-obvious properties play any significant role in children’s formulation of categories (Gelman and Wellman 1991, 215). Fraser’s earlier characterization of similarity for the

Later Mohists and for Xunzi suggests that he thinks their notion of similarity is based on surface-level physical attributes. However, Gelman and Wellman—and many others since—have strongly suggested that psychological essentialism may become part of our cognition of categories from the age of three or four.

Perhaps the least controversial claim of Gelman and Wellman’s paper is that they found empirical evidence to support the notion that children have a clear understanding of the inside-outside distinction: “We have shown that young children distinguish insides of objects from their outsides, even when the two conflict, and believe that insides can be more essential to an object’s functioning and identity” (Gelman and Wellman 1991, 239). I would imagine that even Hansen would be willing to grant that Pre-Qin thinkers also possessed a clear inside-outside distinction, while also believing that insides are more relevant to an object’s identity than outsides. Furthermore, this conclusion involves no ontological claims whatsoever (since the claim is about the physical insides of things)—or, if it does, it merely attributes recognition of the relevance of the insides of things, as well as the outsides.

Gelman and Wellman’s study suggests the plausibility of psychological essentialism in children, since the theory of essentialism had not yet been widely tested in cognitive science with either children or adults (1991, 242). Thus, their 1991 article alone was not enough to motivate a more general or universal claim of psychological essentialism as a part of the cognition of categories. Nonetheless, the possibility of children being essentialists also points to the possibility of adults being essentialists. Nine years after Gelman and Wellman’s study, and after more studies had been published providing empirical evidence for essentialism, Strevens published an article arguing

against psychological essentialism (Strevens 2000). His argument was that the data is better explained by attributing beliefs in causal laws than by essentialism (Strevens 2000, 150). Indeed, there is an even more relevant criticism of essentialism, which also applies to the cognition of categories: “Research in cognitive psychology almost exclusively targets a single, highly selected subset of a single culture and population” (Medin and Atran 1999, 2).

Strevens’ criticism is relatively easy to deal with by referring to a defence of essentialism against Strevens’ criticism by Ahn et al. (The list of co-authors for this paper includes the major researchers of essentialism: Atran, Gelman, Medin, Coley, etc.) Their counter-argument is that Strevens’ account of causal beliefs does not adequately explain all of the relevant data (Ahn et al. 2001, 59). In particular, one of their major criticisms is that Strevens’ account does not distinguish between which causal laws children believe in when categorizing (Ahn et al. 2001, 60). If it were the case that children only need to believe in *some* causal laws in order to correctly reason with categories, then it would follow that any causal change (natural or unnatural) would be more or less equivalent and children would make no distinction between the two. A usual test for essentialism is whether or not children use artificial or natural changes to inductively generalize from a member to a class (Ahn et al. 2001, 60). It turns out that children make a sharp distinction between natural and artificial changes. Notably, Strevens’ account cannot explain why children would select a natural or biological cause over an artificial one.

The easiest way to address the problem of sample diversity is to look at Atran’s research in the related field of folkbiology. Folkbiology often studies how different cultures understand and classify their natural environment (but this is not its sole focus).

Perhaps the biggest contribution that folkbiology makes to the present discussion is that folkbiological research is frequently cross-cultural (Atran et al. 2001, 6). Moreover, it has found that “There is evidence for universal folkbiological principles that are transtheoretical, transcultural, domain-specific, and complex in design” (Atran et al. 2001, 6). One of the major findings shows that there is a basic level of biological classification amongst all people, a finding that has been shown to be true in many different cultures (including a study with Cantonese fishermen) (Berlin et al. 1973). This cross-cultural applicability will be discussed in greater detail in the next section of this thesis. There are also recent studies that support the notion that essentialism may be a universal part of our categorical reasoning (Atran et al. 2001; Sousa et al. 2002). While the cultural net for research on essences does need to be widened before a confident claim about its universality can be made, the evidence from cognitive science (together with the evidence from folkbiology) gives not only plausibility to the essentialist hypothesis, but also strong reason to believe that essentialism is a general feature of reasoning with categories.

Perhaps what is most relevant to the discussion of psychological essentialism in early Chinese thought is that the studies in cognitive science and folkbiology intersect using one specific test regarding the innate potential of living things. This test is first used in Gelman and Wellman’s 1991 study, but is also used by Atran et al. (2001) and Sousa et al. (2002). Gelman and Wellman describe the test as:

For many living kinds, an individual can have a certain intrinsic potential even before it manifests that potential in any visible way. For example, a tiger cub has the potential to grow into something large and fierce, even though when born it is small and helpless. To explain developmental changes of this sort, we as adults often appeal to something like an intrinsic category essence. In other words, all tigers have an underlying nature or

essence that is responsible for how they grow. If children, too, believe that immature creatures have intrinsic potentials that are not yet visible but will become manifested over time, then this would constitute evidence of one kind of essentialism. The belief in an essential nature or a determining but non-manifest predisposition.

To test this notion, we conducted a study that can be thought of as a “nature-nurture” study. On each of a series of items, children were told about an immature being, a baby animal that was brought up in an environment more suited to a different species. The question is how children believe this animal will grow. Will it show as yet invisible, undeveloped potentialities intrinsic in its category membership, or will it instead display the properties associated with its environment of upbringing? (Gelman and Wellman 1991, 230)

This study found that “children are essentialists, at least concerning how animals grow and mature. They assume that members of a category share something like an innate or intrinsic potential that will be realized even when an animal is reared by members of a different species” (Gelman and Wellman 1991, 234)). I quote this study at length because it is the key study that extends beyond the inside-outside distinction discussed earlier. Moreover, it is particularly relevant to making a positive interpretation of *shi* as a concept similar to essences.

Earlier, we saw that *shi*, at its most basic level, means ‘fruit.’ If one keeps in mind its basic or literal meaning of ‘fruit,’ than it would be easy to see how this term comes to serve the same explanatory role that essences, Platonic forms, ideas, etc., do in the West. It can be seen that the meaning of *shi* as real, stuff, actuality, or substance is a metaphorical extension of its meaning as ‘fruit.’ A belief or understanding of innate potential explains how *shi* came to have this metaphorical extension. It can also be seen that a thing’s *shi* determines what it will become. For example, to speak only of fruit, if we take a seed from an apple and plant it, than we can expect to get an apple tree that will produce apples (and not oranges) as its fruit. This is the extent of the interpretive context

that I am advancing: it is both plausible and empirically viable that Early Chinese thinkers would possess the same beliefs and expectations for seeds or young animals. Furthermore, it is highly plausible that *shi* is the concept or word that fulfills this explanatory role in their theory of naming, and that it informs their construal of the similarity relation.

5.5 Conclusions

Hansen's theory of behavioural nominalism states that Chinese thinkers were committed to no entities other than names and objects (Hansen 1983, 31). Hansen's nominalism, furthermore, is a restriction on a standard Goodman formulation, in that Hansen specifically claims that 'objects,' for Chinese thinkers, were only concrete things and not abstract concepts (Hansen 1983, 175). Bao erroneously construes Hansen's position as claiming that there were no abstract entities in Chinese thought. This reminds us that when Hansen makes such claims, he is generally asserting that Chinese thinkers were not committed to abstract entities in their philosophic theories—not that there were no abstract entities. Fraser develops Hansen's argument in one important respect by noting that Chinese thinkers appealed to a notion of similarity instead of appealing to essences, Platonic forms, meanings, ideas, etc.

Similarity, however, as presented in Fraser's argument, is far too vague a notion to serve as a useful guide for classification (identifying different things that belong to the same kind). It turns out that while Chinese thinkers may not appeal to any of the usual Western solutions to the one-many problem, they did appeal to *shi* (實). *Shi*, which is a key concept in Chinese philosophy, seems to have been under-researched in the theories of naming in Early Chinese thought. As an additional or alternative interpretation, I posit

that if we understand *shi* in the context of psychological essentialism provided by folkbiology and cognitive science, then we are able to explain the role of *shi* without attributing any additional ontological commitments to Chinese thinkers. At this stage, however, *shi* requires more research to determine whether it can be interpreted as ‘essence,’ in the cognitive science or folkbiology sense, or if it simply demonstrates the Chinese understanding of how different things can be called by the same name.

6. Ontology

6.1 Logic, Sets, and Individuals

Set theory is the foundation of modern mathematical logic: “Logic is concerned with classes of things...classes are more often referred to as SETS” (Tarski 1995, 68). Set theory, as a proper part of mathematics, finds its origins with Georg Cantor and his investigations into transfinite numbers (Stoll 1961, 1). It later became a crucial part of the logic created by Gottlob Frege, and plays an important role in his influential definition of number in the *Foundations of Arithmetic*. Set theory is so ubiquitous in mathematics and logic that its principles and theory are often assumed to be common knowledge. This can be startling to a beginner in logic. Nonetheless, sets and set theory cannot be assumed in our study of the philosophical foundations of Chinese logic, since one can have logic without sets. Thus, an argument needs to be made for why sets may be necessary (or, at the very least, useful) for motivating a deductive interpretation of Chinese logic. Additionally, whether or not Pre-Qin ontological commitments or philosophical theories preclude any notion of sets must be investigated, especially in light of Hansen’s mass noun hypothesis and its implications.

The notion of sets, though, can only be indirectly understood as a part of Pre-Qin ontology. It can be said with a fair amount of confidence that no Pre-Qin thinker or mathematician had any notion of the mathematical concept of ‘set.’ Even in the West, sets are a fairly recent development in mathematics and, it can be argued, are not necessarily the easiest mathematical notion to understand (this is particularly true considering Cantor’s motivation for rigorously developing the notion). However, as

Tarski notes above, sets do have a non-mathematical counterpart—classes—which are often considered as being equivalent to sets. However, it is the case that the notion of ‘classes’ is more broadly used than the mathematical notion of ‘sets.’ Whether or not classes are used (or even play a role in Pre-Qin philosophy) can be investigated because of their greater generality. Much of the same argument can be made for the concept of categories.

Sets are “simply a collection of things or objects” (Willerding 1966, 1). This definition is amusing because, while the notion of a collection of things is relatively easy to understand, it gives no indication about the nature of sets, their composition, or their qualities. That there is nothing really simple about the notion of ‘sets’ can be seen with the iterative concept of set, in which sets and set membership are organized in a strict hierarchy as a means to eliminate the paradox of naïve set theory. While sets are “simply a collection of things or objects” (Willerding 1966, 1), what exactly is this collection? Is it its own distinct thing, or just a manner of speaking (or thinking) about many objects?

A different definition may add greater clarity to the notion. According to Robert R. Stoll, Cantor’s definition of set is “any collection of definite, distinguishable objects” (Stoll 1964, 2). This definition gives a much better indication about the nature of sets and their composition. It can be noted that the only real difference between this definition and the one in the preceding paragraph is the inclusion of the words ‘definite’ and ‘distinguishable’:

With regard to any pair of objects qualified to appear as elements of a particular set, one must be able to determine whether they are the same or different. The attribute “definite” is interpreted as meaning that if given a set and an object, it is possible to determine whether the object is, or is not, a member of that set. The implication is that a set is completely determined by its members. (Stoll 1964, 3)

Now we have a much better understanding about both the nature of sets and their objects. It is helpful to note that sets are determined by their members, since we can be clear about the characteristics of the objects that belong (or can belong) to a set: these objects must be well individuated. They must exist such that they can neither be confused with another object nor belong ambivalently to a set.

The requirement that objects belonging to a set be well individuated is crucially important to the usefulness of sets in logic (since sets are used in the semantics of logic). Their function in semantics explains why ontology is a significant philosophical concern. This is especially true in light of the fact that Pre-Qin thinkers have not only a concept of truth, but also a theory of truth, since “Ontologies are structures that facilitate the distribution of truth values over a theory’s interpreted sentences” (Woods and Peacock 2004, 268). Thus, since Pre-Qin philosophy has a theory of truth, it is of the utmost importance to discuss the nature of the structure that facilitates the distribution of truth-values for the interpreted sentences of early Chinese logic. In other words, the semantics of classical logic does not work if objects are not well individuated.

A striking case of this can be found in quantum logic, where “Some logicians are of the view that since the basic entities of the quantum world are intrinsically stochastic, they lack the determinacy required for individuation” (Woods and Peacock 2004, 267). As such, “The quantified sentences of QM [quantum mechanics] can’t be modeled classically” (Woods and Peacock 2004, 267). Of course, in some interpretations, this is not necessarily thought to be a problem, for interpretations are dependent on whatever theory of truth one is committed to. Those who hold a scientific view of truth do not want the best logical theory to be unable to determine the truth of sentences in quantum

physics. Those who hold a conventional or relativistic view of truth have no problem asserting that quantum physics has its own criterion for truth (as does any other system). Nonetheless, the question of whether or not Pre-Qin Chinese thought has an ontology that includes well-individuated objects must be settled before a deductive interpretation of Chinese logic can be considered feasible.

6.2 Chinese Ontology and Chad Hansen

Generally, in philosophy, there are two basic interpretations of sets: we can either understand them as existent objects, or as not existing at all. The former position is that of metaphysical realism, and several different perspectives fulfill the latter position (e.g., an idealist would conceive of them as ideas, or a linguist might consider them simply a convention of language). The latter position can be represented by nominalism or physicalism (which are related, but slightly different, theories). There are various motivations for adhering to either interpretation; fortunately, in this case, only one kind of metaphysical realism and nominalism—the kind represented by Hansen and Fraser—needs to be considered (as no scholars hold the physicalist position). The metaphysical realist position requires the most minimal philosophical assumptions, while also being the most plausible position to assume in the absence of any textual evidence. In this sense, sets are real because they play a real functional role in our cognition. However, the metaphysical realist position (as represented by cognitive science) is also conceptually problematic because it views classes, categories, and sets as a part of our cognitive processes for understanding the world around us.

Hansen's work is among the most developed, rigorous, and explicit ontologies for Chinese thought. It was explicitly developed as part of a larger interpretation of Chinese

logic. The general outline of Hansen's theory of Chinese ontology is expressed below:

It is tempting and initially plausible to interpret mass nouns as singular terms naming fragmented objects scattered in space-time (e.g. Goodman individuals or collective classes as in Mereology). Essentially, I am theorizing that the Chinese thinkers more or less intuitively adopted just that picture of the world-language relation. (Hansen 1975, 248)

Elsewhere, Hansen explicitly claims that “Chinese ontology...is mereological” (Hansen 1983, 31). Mereology, according to Hansen, is coterminous with the nominalistic interpretation of Chinese logic: “I use nominalism because the Chinese philosopher is not committed to any entities other than names and objects” (1983, 31). Nominalism, in turn, is closely related to Hansen's theory that Chinese thinkers are not committed to any abstract entities (Hansen 1983, 31).

6.3 Mereology

Hansen's objection to attributing the mathematical notion of classes to Pre-Qin thought is partially based on the claim that it would be paradoxical to attribute a notion of 'class' to Pre-Qin thinkers when they had no notion of 'member' or 'membership' (Hansen 1983, 113). When considering this piece of evidence—the lack of distinction between class and member—we see a basic methodological problem at play. Hansen takes the absence of an explicit theory or debate about class membership (known as the one-many problem) as evidence for mereology. However, I am quite unsure whether membership, if Warring States Chinese thought did have classes, would need to be a problem. This is especially the case considering the empirical evidence for a universal, non-linguistic, object-substance distinction and essentialism in folkbiology and cognitive

science.²⁹ It could be the case that Warring States thinkers were simply untroubled about how the one is related to the many (or even that this was a question whose answer was too obvious to be worth study). Either explanation is at least as plausible as Hansen's ontological claim for mereology. Indeed, considering the empirical evidence, the explanation that they just didn't care—that they simply had better things to worry about—is actually plausible.

While Mou's account is also motivated by the question of why the one-many problem was never posed in Chinese thought (Mou 1999, 45), it turns out that his complication of the issue at hand by invoking Lewis's theory actually raises an important question: Is there any evidence that the part-whole relation is more intuitive or obvious than the one-many relation? We can see from the earlier discussion on psychological essentialism that some understanding of the one-many relation may simply be part of our cognitive resources for engaging and understanding the world. Lewis's nominalistic set theory demonstrates that, given enough creativity and motivation, the part-whole relation and the member-set relation can be viewed as analogous (Lewis 1998). It is not my desire to argue the validity of Mou's collective nouns or Lewis's mereological sets, but rather to point out that it seems as if the part-whole relation is at least as complex as the one-many relation. Indeed, the part-whole relation is not nearly as obvious as Hansen presents it.

Hansen's construal of the part-whole relation as both dominant and foundational in his interpretation of Chinese ontology goes beyond his interpretation of their logic. Mereology is a natural extension of the widespread understanding of the holistic nature of Chinese cosmology. Holism, in turn, is an interpretation that seems heavily influenced by

²⁹ This evidence was presented in two earlier sections on the mass noun hypothesis (Section 4) and nominalism (Section 5), respectively.

the understanding of partly philosophical and partly religious concepts like *dao* (道).

Hansen's mereological claim appears to be a simple extension from the holistic nature of something like *Dao* onto everyday objects. At first glance, this seems to be an entirely reasonable theoretical extension—particularly since all ordinary objects are thought to arise from *Dao*. However, there seems to be a large distinction between Hansen's conclusion that Pre-Qin ontological thought is exclusively devoted to mereology and the claim that mereology was simply one of many claims in Pre-Qin thought.

There appears, however, to be a step missing between the holistic interpretation of early Chinese cosmology and a general mereological theory of everyday objects. From the above discussion on the nature of *Dao*, we have some idea about the possible relation that it bears to our everyday existence, but we still need to establish a better theory of this relation. Fraser, who explicitly develops this line of reasoning, claims that “The ‘one body’ view and the cosmological idea that the myriad things arose through division out of a primordial whole both seem best explained by attributing a rough kind of mereological worldview to ancient Chinese thinkers” (Fraser 2007, 445). However, Fraser still provides no connection between a religious or cosmological theory and the Pre-Qin understanding of everyday objects. This is particularly the case concerning Fraser's understanding of how objects are related to other objects. At best, Fraser's claim only supports the theory that objects are parts of *Dao*, yet this still leaves room for the claim that objects can bear a membership relation to other objects (or, in other words, that while objects are parts of *Dao*, they are still entirely distinct from each other such that they fulfill the requirements for membership in sets).

Importantly, in the introduction of his discussion, Fraser places a crucial caveat on

his abovementioned conclusion: “The grounds for it are limited and mostly confined to Mohist and Daoist texts, and the exact extent and nature of Chinese mereological views are unclear” (Fraser 2007, 420). With this caveat in mind, I am willing to grant Fraser’s conclusion, since my purpose here is only to demonstrate that Pre-Qin philosophy includes classes (and not that it excludes mereology). Moreover, my methodological stance makes me resist generalizations over Pre-Qin philosophy.

6.4 The Case for Classes in Pre-Qin Philosophy: *Jian* (兼)

While I am willing to grant that a mereological interpretation may be accurate for Daoist texts, Fraser’s argument and evidence for this interpretation of the Later Mohists texts is not entirely convincing. Alternatively, if Fraser is right, he is not unrestrictedly correct. When presenting evidence for a mereological worldview in early Chinese thought, he writes, “I will argue for the part-whole interpretation, suggesting that *jian* [兼] is probably best explained as denoting a mereological whole whenever it is used as a noun in the later Mohist texts. Thus, I suggest that the Mohists probably employed a mereological ontology” (Fraser 2007, 441). When we look at Canon A2 and Explanation A2 from the Later Mohist “Canons” and “Explanations,” which Fraser uses as evidence, the opposite actually appears to be true:

Canon A2: A unit is a division from a collection.³⁰

Explanation A2: Similar to one of two, [a unit] is the starting-point of a measured length.³¹

Fraser interprets the two examples above by noting that:

In the first example, the *jian* is a collection of two discrete items, something that could be described as a set. But in the second, it is a unitary object, such as a line or

³⁰ 經上: 體, 分於兼也。

³¹ 經說上: 體: 若二之一, 尺之端也。

a measuring stick. This instance of a *jian* cannot plausibly be interpreted as a set—for instance, the set of points in a line—because the example given of a *ti* 體 (part) is *duan* 端 (tip), which refers not to points in general, but specifically to a starting point. Both examples can be explained by interpreting *jian* as “whole” and attributing a mereological ontology to the Mohists. According to this interpretation, the pair of objects is regarded as a whole with two parts, not a set with two members. (Fraser 2007, 441-442)

I concur with Fraser right up until he writes, “Both examples can be explained by interpreting *jian* as ‘whole’ and attributing a mereological ontology to the Mohists” (Fraser 2007, 441-442). My desire has been to demonstrate that the best (and most plausible) interpretation of Classical Chinese ontology is one that has space for both mereological wholes and classes. Fraser, on the other hand, provides three reasons to support an exclusively mereological interpretation: (1) Canon A2 treats *jian* (兼) as conceptually preceding *ti* (體); (2) *ti* and *jian* are interchangeable in a way members and sets are not; and (3) *ti* can refer to a group of objects (Fraser 2007, 442-443).

Regarding Fraser’s first claim that Canon A2 treats *jian* as conceptually preceding *ti*, it is hard to see why this is important. It is, of course, a problem if we accept Hansen’s claim that there is no notion of ‘member’ in Pre-Qin thought—something we have little reason to allow. Fraser writes that “It is difficult to see how *jian* can correspond to sets and *ti* to their members if *ti* are defined by dividing *down* from *jian*” (Fraser 2007, 442). Fraser, by taking logical priority as a problem for interpreting *jian* as a class, fails to consider why *ti* is being defined as a technical term in the first place. In this regard, it is possible that the Later Mohists are invoking an uncommon or extended definition of *ti* (as they often do with their definitions). The sentence “體，分於兼也” can be translated, as Fraser does, as “A unit is a division from a *jian*” (Fraser 2007, 441), or it can be translated as “To be a unit is to be separable out of a *jian*” (My translation). The latter

translation implies exactly the sort of container metaphor that would imply a cognitive understanding of *jian* as being equivalent to classes.³² Furthermore, using the latter interpretation, we can plausibly understand the Later Mohists as creatively extending the common notion of *ti* to include membership (which could, in turn, imply that the general ontological theories of the time were mereological, and that the Later Mohists were arguing against such a construal of the world). This would, in fact, explain both the inclusion of *ti* as a technical term in the “Canons” and “Explanations” as well as the logical priority of *jian* in the definition.

Fraser claims that in order to explain his second argument for the exclusive mereological interpretation, “The notions of *jian* and *ti* seem interchangeable in a way that those of a set and its members are not. According to Canon A2 a starting-point (*duan*) is a *ti* that is part of a measured length, while according to Canon A61 it is the dimensionless tip of something that is itself a *ti*” (Fraser 2007, 442). Fraser’s explanation indicates that he has misconstrued the analogy in Canon A2 and Explanation A2, for in A2, it is not the case that “A starting-point (*duan*) is a *ti* that is part of a measured length” (Fraser 2007, 442); rather, a *ti* is similar to the starting point of a measurement. Indeed, Fraser’s language obscures the consistency in meaning of the term ‘starting-point’ in Canon A2 and Canon A62. A2 asserts that *ti* is similar to a starting point, and A62 asserts that a starting point is a *ti* without width. Thus, contrary to Fraser’s interpretation, it seems that it is actually *ti* and *duan* (端) that are interchangeable—not *ti* and *jian*.

The conclusion that “An object such as a measured length can be either a *jian* or a *ti*” fails in both my and Fraser’s interpretation (Fraser 2007, 442). In Fraser’s opinion, a

³² Container metaphors are discussed in greater detail Section 6.5.

measured length can be a *ti* or *jian* only when a measured length is assumed to be a mereological whole. If a measured length is a mereological whole, then a *ti*, as part of the whole, is also a measured length (in the same way that a part of water is still water). However, because Fraser is attempting to demonstrate his interpretation of *jian* as a mereological whole, his argument is circular. Moreover, his interpretation fails on two other accounts. First, it fails because, as Fraser himself notes, “Speaking a language with mostly mass nouns need not incline thinkers to construe things as unindividuated, unstructured masses” (Fraser 2007, 429). It fails on a second count because, in addition to my interpretation that *ti* and *duan* are interchangeable, Canon A62 makes it clear that *ti* and *duan* have no width. Thus, neither can be considered to be measured lengths themselves, thereby implying that *jian* and *ti* are quite distinct and not at all interchangeable (not even metaphorically).

The third and last argument Fraser makes for an exclusive mereological interpretation is that, “According to the ‘aggregate’ construal of the *ti-jian* relation, there are contexts in which *ti* must refer to a group or set. This use of *ti* is difficult to reconcile with the word’s basic meaning—roughly, ‘body’—and its use to denote the human body” (Graham 1978, as noted in Fraser 2007, 442-443). Fraser represents the aggregate construal of *ti* and *jian*, attributed to Graham, as claiming that:

Commonsense, pre-theoretical discourse about the relations between things and their components might apply both part-whole and set membership relations. So it is possible that the notions of *jian* and *ti* might be general enough to cover both of these sorts of relations, without distinguishing sufficiently finely between them to count as exclusively mereological or set-theoretical notions. (Fraser 2007, 442)

While I am not arguing for the ‘aggregate’ view, I am arguing for interpreting *jian* as ‘classes,’ and so Fraser’s criticism still applies. The best way to address this criticism

is to look at Fraser's argument and the evidence he uses to defend it. Fraser's contends that "If *ti* is sometimes used to refer to the group, not the individual items, then the case for the aggregate interpretation collapses, and only the part-whole interpretation satisfactorily explains all uses of *ti* and *jian*" (Fraser 2007, 443). He uses Canon B12 and Explanation B12 to affirm the antecedent of this claim:

Canon B12: Explained by both being considered one, considered as only 'this.'³³
Explanation B12: Both being considered one, is similar to how [both] oxen and horses have four feet; being considered as only 'this' accords to oxen and horses. If you enumerate oxen and enumerate horses, then oxen and horses are two [classes] but if you enumerate oxen and horses [together], then oxen and horses are considered one [class]. This is like enumerating fingers, fingers are five and five [fingers] are considered one [hand].³⁴

Although this passage does seem to instantiate the antecedent of Fraser's conditional (especially in regards to the analogy of fingers and hands), a set theoretic interpretation also makes good sense in this case. Indeed, if we accept the earlier interpretation of A2 as introducing an extended notion of *ti* that includes membership, then B12 creates no problems for the class interpretation.

There are two ways to interpret B12 as being about classes. Firstly, the oxen and horses can be considered as 'one' class, because the class of 'four-footed animals' includes the classes of oxen and horses. Alternatively, the union of the classes of oxen and horses can be considered to create a different class that includes all oxen and horses. The first interpretation creates no conflict of the kind that Fraser is commenting on, because my interpretation of *ti* implies a principle of individuation necessary for membership in a class. Indeed, the explanation of *duan* as being 'without similarity' is precisely the kind of individuation needed for class membership. Moreover, because sets

³³ 獸物一體也，說在俱一、惟是。

³⁴ 俱：俱一，若牛馬四足；惟是，當牛馬。數牛數馬則牛馬二；數牛馬則牛馬一。若數指，指五而五一。

are able to be members, and because anything that is a member is called a *ti*, sets also require the individuation characteristic of *ti*. Contrary to this use of *ti* being “difficult to reconcile with the word’s basic meaning—roughly, ‘body’—and its use to denote the human body” (Fraser 2007, 442–443), it makes perfect sense, since human bodies (along with geometric points) are stereotypical examples of well-individuated things.

Ultimately, it seems that none of Fraser’s arguments in support of an exclusive mereological interpretation are conclusive. Thus, we can conclude here that Later Mohist ontology or ontological theories are not exclusively mereological. Additionally, while my interpretations and arguments could be used to assert an exclusive ontology of classes, it is wholly unnecessary for my thesis to assert such a strong claim. In the end, my basic methodological point remains true: there is no reason to believe that the Later Mohists, or any other thinkers, maintain either an exclusively mereological or exclusively set theoretic ontology. I would even be willing to grant that Fraser’s interpretations of the passages in question are both better and more correct than mine. It is not the notion that *jian* and *ti* refer to mereological wholes and their parts that I am arguing against; rather, I disagree with the notion that *ti* and *jian* are best understood as referring to parts and wholes in every instantiation in the Later Mohist texts (or any other texts, for that matter). It would also seem that if my interpretation is plausible (and even partially correct), then Hansen is also wrong about there being no notion of ‘member’ in Pre-Qin thought. This makes room for the argument that *lei* is best interpreted as referring to some notion of classes—which is precisely what I shall prove in the next section.

6.5 The Case for Classes in Classical Chinese: *Lei* (類)

Hansen does consider *lei* as a possible challenge to his hypothesis in *Language and Logic in Ancient China*. He writes:

Lei 類, on the other hand, cannot be the technical equivalent of ‘class’ since...the mathematical notion of class is ‘born together’ with the distinction of subclass and member. Without any such distinction, *lei* could only be regarded as mereological class—using (as we shall see) only the distinction of part-whole. This conclusion, obviously, is reinforced by the masslike grammar of the nouns called *lei*. (Hansen 1983, 113)

We can see that Hansen has two pieces of evidence to support his interpretation: first is the lack of distinction in Warring States philosophy between class and member; and second is the mass-like grammar of nouns called *lei*. Each of these points has already been dealt with (the first point in the previous section, and the second point in Section 4). However, it does bear repeating that we have good reason to think that there was some notion of membership in Chinese thought, and that there is no mass noun grammar in Classical Chinese.³⁵

Thierry Lucas develops a slightly more nuanced approach to the conceptualization of *lei* in “Later Mohist Logic, *Lei*, Classes, and Sorts” (2005). Yet, his interpretation still falls short of full-blown classes. He first develops an argument that Later Mohist logic requires a domain of “sorts of objects” (Lucas 2005, 355). He assumes a somewhat complicated and formal approach that I am not convinced is necessary. In any case, this impacts his discussion of *lei*, as he asserts that, “*Lei* is a notion which

³⁵ I will take a moment to also point out that Hansen’s first point—that there is a lack of distinction between class and member—reveals a basic methodological mistake. Hansen takes the lack of an explicit theory or debate about class membership (or the one-many problem) as evidence for his stuff ontology. However, if Warring States Chinese thought does have classes, then I am not certain why membership needs to be considered a *problem*. It could simply be the case that Warring States thinkers were not troubled about how the one is related to the many, since they could rely on *shi* for a folkbiological notion of essences. If we take keep this in mind, it is always pragmatically clear how members relate to their class.

combines characteristics of sorts (it serves to divide the world in disjoint classes) and characteristics of predicates (it is used to form sentences where it is a predicate)” (Lucas 2005, 361). Lucas seems to be asserting that *lei* cannot be identified with classes because it is used as a predicate and while predicates extensionally determine classes they are not classes themselves. However, it is fairly easy to see that this use of *lei* as a predicate is not very meaningful or significant. After all, we also use ‘class’ or ‘set’ as a predicate in English (e.g., in the sentence ‘The natural numbers are a set’, ‘Are a set’ is a predicate, but this does not mean that we have cause to think that ‘set’ cannot refer to classes). Thus, *lei* being used as a predicate only means that *lei* is sometimes used as a predicate. Regarding Lucas’s theory of sorts, I think it behooves us to investigate whether or not an easier, but non-mutilating notion of classes can be attributed to Pre-Qin thought.

When studying the ontological status of *lei*, we can easily dispense with the question posed above about what ‘sets,’ ‘categories,’ ‘classes,’ and ‘*lei*’ are: for namely, they are all cognitive metaphors for containers.³⁶ George Lakoff and Rafael E. Núñez, in *Where Mathematics Comes From*, write, “The concept of containment is central to mathematics” (2000, 33). Here, we understand that ‘containment’ is meant quite literally—that is, objects in containers. They show that “The concept of a class is experientially grounded via the metaphor that Classes Are Containers—mental containers that we use in perceiving, conceptualizing, and reasoning about our experience” (Lakoff and Núñez 2000, 140). Moreover, the interpretation of *lei* as a cognitive container metaphor has the added bonus of remaining neutral about which variation of English must be used to translate it. The task at hand, then, is to establish a good interpretation of

³⁶ A similar argument can be made for *jian*. In fact, all of the comments about the cognitive container metaphor apply to *jian*, as demonstrated by the Later Mohist definition using the co-verb *yu* (於) in its definition.

lei as a Chinese metaphor for containers.

In order to successfully interpret *lei* as a container metaphor, I need to demonstrate that it is discussed in such a way as to possess the qualities of a container: “The Container schema has three parts: an Interior, a Boundary, and an Exterior” (Lakoff and Núñez 2000, 30-31). If *lei* is not discussed in such a way that we can perceive it to have these characteristics, then it is probably not a container metaphor. Fortunately, this is something that is relatively easy to test, since each of these characteristics imply the other (i.e., ‘inside’ and ‘outside’ are relational terms; hence, indication of one is indication of the other, and having both implies some distinction or boundary between the two). Moreover, there are relatively obvious syntactic cues that we will be able to identify if *lei* possesses any of these qualities. Grammatically, we can see that if *lei* is conceptualized as a container, then something like the conceptual language of ‘in’ and ‘out’ should apply, for “every language has a system of spatial relations” (Lakoff and Núñez 2000, 30). However, it may turn out that, even if *lei* possesses these characteristics, its meaning is still ambiguous between ‘class’ or ‘natural kind.’ The interpretation of *lei* as ‘kind’ is relatively standard, which any interpretation of *lei* as ‘class’ needs to take into account.

In my first approach towards understanding the use of *lei*, I will take a small sample of sentences using *lei* and see what conclusions can be drawn from the sample. The following passages are taken from the *Xun zi*:

1. Things which are of the same species [*lei*] and form will be apprehended by the senses as being all the same thing.³⁷ (Watson 2003, 146)
2. Beings that possess desires and those that do not belong to two different categories [*lei*]—the categories of the living and the dead.³⁸ (Watson 2003, 154)

Here are some examples of uses of *lei* from the *Zhuang zi*:

³⁷ 緣天官。凡同類、同情者。(Xun zi, “Zheng ming”)

³⁸ 有欲無欲，異類也，生死也，非治亂也。(Xun zi, “Zheng ming”)

3. I don't know whether it fits into the category [*lei*] of other people's statements or not. But whether it fits into their category [*lei*] or whether it doesn't, it obviously fits into some category [*lei*].³⁹ (Watson 1968, 43)
4. Tigers are a different breed [*lei*] from men, and yet you can train them to be gentle with their keepers by following along with them.⁴⁰ (Watson 1968, 63)

Finally, here are some examples from the *Mencius*:

5. Hence your failure to become a true King is not the same in kind [*lei*] as “striding over the North Sea with Mount T'ai under your arm,” but the same as “making an obeisance to your elders.”⁴¹ (Lau 1970, 11)
6. The Sage, too, is the same in kind [*lei*] as other men.⁴² (Lau 1970, 35)
7. Were the nature of taste to vary from man to man in the same way as horses and hounds differ from me in kind [*lei*], then how does it come about that all palates in the world follow the preferences of Yi Ya?⁴³ (Lau 1970, 126)

The first conclusion that we can draw is that interpreting *lei* as a general classifying term is not only plausible, but also accurate. (Even having accepted that interpretation, however, its use is still ambiguous between ‘class’ and ‘kind.’) The other thing that is immediately noticeable is that *lei* is often used for contrastive purposes. Indeed, *lei* is used in these sentences to say that something is not in the same *lei* as others. In example 6, where *lei* is not used for contrast, we can see that it draws out the third reason for using *lei*—emphasis (this use can also be seen in the other examples). The other, and perhaps most important, observation is that *lei* only seems to be used for natural kinds or concepts.

Since *lei* is used in the examples to disambiguate how ‘horse’ and ‘tiger’ are being used, it is also plausible to interpret *lei* as a general term for basic object categories. This, in turn, means that we can view words like ‘horses’ or ‘tigers’ (when not referring to a

³⁹ 不知其與是類乎？其與是不類乎？類與不類，相與為類。(Zhuang zi, “Qi wu lun”)

⁴⁰ 虎之與人異類而媚養己者，順也。(Zhuang zi, “Ren jian shi”)

⁴¹ 非挾太山以超北海之類也；王之不王，是折枝之類也。(Mencius, “Liang hui wang shang”)

⁴² 聖人之於民，亦類也。出於其類，拔乎其萃。(Mencius, “Gong sun chou shang”)

⁴³ 如使口之於味也，其性與人殊，若犬馬之與我不同類也，則天下何嗜皆從易牙之於味也？(Mencius, “Gao zi shang”)

specific horse or tiger) as being names of specific *lei*. If it is the case that *lei* only denotes objects at the similar hierarchical level as ‘horse’ and ‘tiger,’ then it would fit the findings of cognitive science and folkbiology that there is a basic level of categories (Rosch et al. 1976; Berlin et al. 1973).

Rosch et al. describe this level of categorization as “one level of abstraction at which the most basic category cuts are made. Basic categories are those which carry the most information...and are, thus, the most differentiated from one another” (Rosch et al. 1976, 382). The plausibility of this account, however, depends on the discussion about language acquisition and our cognition of the world in Section 5.3. Nonetheless, if it can be independently established that *lei* does refer to the basic object level of categorization, then it will be extra motivation to suspect that cognitive science is correct in its conclusions about how we understand the world.

However, at this point, it is still equally plausible to understand *lei* as representing classes or kinds. There is an essential difference between the class or kind understanding of *lei*. The difference is found with the container metaphor, where ‘kinds’ are not a cognitive metaphor for a container, but ‘categories’ are. Thus, in order to make a feasible interpretation of *lei* as cognitive containers, we need to find evidence that *lei* has all (and not just some) of the three elements (e.g., insides, outsides, and a boundary). There is a very small selection of uses where *lei* is used with the co-verb *yu* (於) to indicate spatial relations. Two examples are presented below:

8. Sages, in regards to people, are also a *lei*. Going out of their *lei*, [they] are gathered in their group.⁴⁴ [My translation]

⁴⁴ 聖人之於民，亦類也。出於其類，拔乎其萃。 (*Mencius*, “Gong sun chou shang”)

9. Regarding those phrases that use *lei* to move, if [you] establish phrases and do not understand [them] in their *lei*, then this will necessarily cause difficulties.⁴⁵ [My translation]

The above examples are some of the clearest instances I have come across of *lei* being used in conjunction with a coordinating spatial relations term.⁴⁶ While the sample is small (only two examples), they both work to support my theory that *lei* can be understood as the classical Chinese conceptual metaphor for containers. This is especially so when we look more closely at the examples. For instance, in example 8, *yu* is used with *chu* (出), a verb specifically used when the direction of movement is from inside to outside. This is exactly what we would expect to see if *lei* were at least sometimes being used to mean cognitive containers. Example 9 shows that things can be *in* a *lei*. Thus, these examples strongly support the initial hypothesis that *lei* is a Classical Chinese cognitive metaphor for containers.

Another set of examples that supports the container metaphor theory is a locution that seems particular to Mencius. Although this use of *lei* does not explicitly invoke the directional concepts like the examples above do, it does suggest that Mencius conceives of *lei* as being some sort of container. The verb that Mencius uses twice with regards to *lei* is *chong* (充), ‘to fill’: “Is this valuing of activity able to fill their *lei*?”⁴⁷ and “Regarding those who, if they do not have it and yet select it, they are bandits, filling *lei* reaches to the limits of rightness.”⁴⁸ The use of the verb ‘to fill’ in conjunction with *lei* is difficult to conceptualize unless you interpret the meaning by way of the container

⁴⁵ 夫辭以類行者也，立辭而不明於其類，則必困矣。(Mo zi, “Da qu”)

⁴⁶ My method for finding examples was to employ key word searches of the *Analects*, the *Mo zi*, the *Mencius*, the *Zhuan gzi*, and the *Xun zi*. All keyword searches used the Gu Gong database, and sample selection was based on choosing the least ambiguous examples.

⁴⁷ 是尚為能充其類也乎? (Mencius, “Teng wen gong xia”)

⁴⁸ 夫謂非其有而取之者盜也，充類至義之盡也。(Mencius, “Wen zhang xia”)

metaphor. Moreover, specialized locutions like this establish the plausibility of my hypothesis. It is interesting, though, that the majority of evidence in support of the container metaphor interpretation comes from examples from the *Mencius*. It may be the case, then, that this interpretation of *lei* might be most applicable to the *Mencius*. Indeed, further research is necessary to determine how widely this interpretive claim can be applied.⁴⁹

The argument for the container metaphor rests on several different levels of interpretation. The first level is composed of a general theory of the mind and how it perceives the world. If cognitive science is correct about how the mind perceives the world (that is, as clusters of sensory information), and if folkbiology is accurate in its cross-cultural disposition towards categorizing living things into basic object categories, then we have a plausible context for interpreting *lei* as a container metaphor. Interestingly, cognitive science tends to treat ‘living kind’ and ‘class’ as essentially co-referential terms. Indeed, it is quite unclear what is generally meant when *lei* is interpreted as ‘kind’ as opposed to ‘class.’ Slingerland is able to avoid this uncertainty by interpreting *lei* as ‘species.’ This is a good contribution, for it captures both intuitions that *lei* refers to living kinds and is organized in terms of classes of individuals. However, in opposition to this interpretation are the more conceptual uses of *lei*, like in example 3 above (referring to language), or when it refers to different kinds of people (as in examples 2, 5, 6, and 7, above).

⁴⁹ An interesting avenue of research would be to investigate the concept of *tui lei* (推類) or ‘pushing’ *lei*. Studying this term, however, would go far beyond the focus of this thesis, since it is usually translated and interpreted as ‘analogic,’ which, in turn, invokes a whole other area of research in Chinese logic. All in all, it is possibly a subject worthy of its own thesis. Nonetheless, at a basic level, the use of *tui* is interesting since it invokes images of people pushing boxes around (at least it does with me). This is a possibly fruitful avenue for generalizing the container metaphor claim, since the term is used in several late Warring States texts.

All in all, however, there is no need to argue for only one interpretation of *lei*. Interpreting *lei* as ‘species’ when it refers to animals seems apt. Interpreting it as ‘kind’ when it refers to different types of people also seems perfectly suitable. Interpreting *lei* as ‘class’ in both cases seems to work as well. Indeed, in this case, taking Puett’s methodological suggestion that we treat each instance as an individual claim (instead of creating an interpretive context that automatically excludes some other interpretation) seems to be the best solution. As such, this section has been successful in seeking to demonstrate only that a class interpretation of *lei* is plausible on the basis of both textual and empirical evidence.

6.6 Individuation in Warring States Thought

The previous discussions of the mass noun hypothesis, nominalism, and mereology have made discussing individuation unnecessary. If we find that Hansen and those who agree with him are not telling the whole story of Chinese philosophy, then it follows that there is room for individuals (as required by set theory). Indeed, the discussion of *jian* and *ti* in Section 6.4 essentially indicates that the Later Mohists had a robust notion of the kind of individuation needed for set theory. Nonetheless, I find it efficacious to take up Harbsmeier’s insight that quantification provides an important syntactic clue for how nouns divide their references in Classical Chinese. The difference, however, is that instead of treating Harbsmeier’s insights on a piecemeal basis for nouns, applying them to various instances of *lei* allows us to generalize about any noun that can refer to a *lei*.

Perhaps the clearest examples of *lei* being associated with a syntactic principle of individuation are those sentences that use quantifiers, as in this example from the *Xun zi*:

10. Things each follow their *lei*.⁵⁰ [My translation]

The above example is particularly apt and clear because the sentence uses *ge* (各) as the quantifier. According to Edwin G. Pulleyblank, *ge* “belongs to a set of words... which define the subject as individual members of a larger group or the members of such a group taken one at a time” (1995, 130). This example also demonstrates a practical application of container logic, since if things are inside a *lei*, they certainly must move as one with it.

At this point it becomes fair to posit that the things going into a *lei* are well individuated. The kinds of things that seem to be placed in a *lei* further strengthens this conclusion. As we saw earlier in examples 4, 7, and 8, the objects inside of *lei* are things such as horses, hounds, tigers, and people. These are all nouns that customarily divide their references in English, and I think we have good reason (from a cognitive studies and folkbiological standpoint) to think they do this in Classical Chinese as well. In fact, none of the examples above uses *lei* in conjunction with anything that could be reasonably interpreted as a substance-mass noun. Furthermore, in other cases where the use of *lei* could be interpreted as a substance-mass noun on first inspection, they end up being clearly object-mass nouns:

11. Grass and trees grow in fields, birds and beasts live in groups, things each follow their *lei*.⁵¹ [My translation]

In example 11 above, even though the Chinese *mu* (木) can be ambiguous between ‘wood’ and ‘tree,’ we can see that, as a count noun, there is no other way to view the character in conjunction with the verb *sheng* (生) as anything other than ‘tree’. For

⁵⁰ 物各從其類也。 (*Xun zi*, “Zhuan xue”)

⁵¹ 草木疇生，禽獸群居，物各從其類也。 (*Xun zi*, “Quan xue”)

‘wood,’ as a mass substance, is not likely to be understood as something which grows (as is the case in English, so too is it probably the case in Chinese). Thus, we can see that in the absence of syntactic cues, semantic cues are occasionally sufficient to disambiguate between a substance or object noun.

The final clue for the individuation of objects within a *lei* is that *jie* (皆) often quantifies them. Harbsmeier says that “*jie* 皆 regularly quantifies over individual items, hardly ever over amounts of stuff” (1981, 80). Although there were few occurrences of *jie* in my sample set, it was often the only quantifier used in the same clause as *lei*, as is the case in the examples below:

12. Now those men who are palace officials are all (*jie*) [in] this *lei*.⁵² [My translation]
13. Those who dispute affairs of the people and officials, and leave their country, are all (*jie*) in this *lei*.⁵³ [My translation]
14. Regarding the means by which Yan and Song kill their gentlemen, [they] all (*jie*) use *lei*.⁵⁴ [My translation]
15. [Those] now wishing to take the government of previous kings, to rule the people of today, are all (*jie*) in the *lei* of guarding stumps.⁵⁵ [My translation]

With Harbsmeier’s analysis of *jie*, the most plausible way to understand these examples is that the objects in a *lei* are referred to individually (and most certainly not as atoms of an individual, as Goodman puts forth).

I have only treated two of the quantifiers that are generally understood to refer to individuals. There are other possible quantifiers that could be tested for further examples in future research studies. However, the cases presented here are sufficient for my goal of demonstrating the plausibility of understanding *lei* as cognitive containers and

⁵² 今人臣之處官者皆是類也。 (*Han fei zi*, “Shuo lin shang”)

⁵³ 人臣之爭事而亡其國者，皆虬類也。 (*Han fei zi*: “Shuo lin xia”)

⁵⁴ 夫燕、宋之所以弑其君者，皆以類也。 (*Han fei zi*, “Ai chen”)

⁵⁵ 今欲以先王之政，治當世之民，皆守株之類也。 (*Han fei zi*, “Wu du”)

representing classes of well-individuated objects. It is possible that there are examples of *lei* being quantified by a quantifier, which would indicate that it was understood as a substance. However, since my methodology advocates interpretive pluralism, such examples would not serve to act counter-examples to my interpretation. On the contrary, they would actually vindicate my intuition that pluralism is the best methodological approach to Chinese philosophy.

6.7 Conclusions

Mereology is the ontology that Hansen believes informs Early Chinese thought. Part of his motivation is that Chinese thought has no notion of ‘member’—without which, any notion of ‘class’ would be meaningless or unnecessary. Hansen’s other major motivation is how Early Chinese theories posit that things arise from *Dao*. Fraser makes this motivation explicit, and further argues that the concepts of *jian* (兼) and *ti* (體) are best explained in mereological terms. Hansen’s theory that Pre-Qin Chinese thought has no notion of ‘member’ represents his argument against the ‘class’ interpretation of *lei* (類).

Contrary to Fraser’s conclusion about *jian* and *ti*, I argue that the geometric metaphor used in the Later Mohist *Canons* implies that these concepts cannot be unrestrictedly interpreted as ‘whole’ and ‘part,’ respectively. Moreover, the theoretical extension of the notion of *ti* in *Canons* further suggests that the Later Mohists, at least, did have a firm understanding of membership. Hence, I argue that *lei* is best understood as the Chinese cognitive metaphor for containers. I demonstrate this by noting that *lei* appears to have all of the trademarks of containers: insides, outsides, and a boundary between the two. Moreover, because it appears that *lei* is restricted to either living kinds

or to more abstract concepts, it seems that there is a basic level of categorization in human cognition (an argument that merges with the findings of folkbiology and cognitive science). This is followed by a brief discussion on the nature of quantification in Classical Chinese and how it provides for the individuation needed for objects to be counted as members of some class or other. Ultimately, it is concluded that Pre-Qin thought has the theoretical resources for classes, members, and membership, in addition to having wholes and parts.

7. Conclusions

7.1 General Concluding Remarks

Although my thesis appears to be directed against Chad Hansen's influential theories of Chinese logic, my quibble with him is actually directed towards the generality of his conclusions. I have been working to demonstrate that there is a "more troubled, world of debate" (Puett 2002, 25). I happen to agree with Graham when he says that Hansen's part-whole interpretation of the "White Horse Dialogue" of Gongsong Long, "is the breakthrough we have been waiting for" (Graham 1986, 92). Hansen's interpretation really does make the best possible sense of one of the most conceptually challenging texts from the Warring States period. I am even more inclined to agree with Hansen on this account because he is one of the few scholars willing to state outright that the statement "A white horse is not a horse" is false (and should be considered false) under any interpretation of the "White Horse Dialogue" (Hansen 2007, 487).

Nonetheless, it is my sincere hope that I have accurately and faithfully represented Hansen's findings. His theories and arguments are detailed and complicated, making them at turns both exhilarating and frustrating to examine. Hence, my general method of engaging his arguments has been to take a few steps back from the specific details whenever possible in order to treat the general interpretive context of his claims (as I did with the mass noun discussion). Alternatively, I have done my best to attend to the most relevant details of his arguments and criticize them in Hansen's own terms (as I did with the discussion of truth). Ultimately, using both strategies has, I hope, allowed for my arguments and criticisms to succeed on several different levels.

It can be seen that my disagreement with Hansen is mainly methodological, and the arguments within this thesis are the consequences of this methodological disagreement. Still, I believe that my interpretations of the thinkers discussed within this thesis are defensible on account of the data provided by cognitive science and folkbiology. Hansen writes that interpretations “should rest on principles, semantic theories, background beliefs, and norms of use accessible to the Chinese readers of the time” (Hansen 2007, 487). My account rests on the assumption that, obviously, Chinese people of that time had the bodies and brains common to every other person, no matter what part of the world they resided in. Thus, we can reasonably assume that Classical Chinese thinkers’ physical brains operated in ways similar to how ours do today. My interpretation takes into account this basic fact, while Hansen’s do not.

I realize that my general invocation of ‘empirical evidence’ is certainly open to criticism. Indeed, it is true that science and scientific methodology are open to theoretical criticism and not without their own philosophic troubles. However, it is beyond the scope of this thesis to engage in a debate over the status of scientific truths. Yet, for those inclined to hold such a view of science or empirical truths, I suggest that I have still accomplished the same feat that Hansen did in *Language and Logic in Ancient China*—namely, I have suggested and used a ‘coherent’ interpretive framework that accounts for both linguistic and textual details of early Chinese thought in much the same way that Hansen does. Moreover, the burden of proof is on critics to demonstrate how an interpretation that does not account for empirical data is better than one that does.

7.2 Summation of Claims

It has been my intention to demonstrate that, despite Hansen’s philosophical roadblocks, a deductive interpretation of Chinese logic is not only plausible but also a worthwhile and fruitful avenue of research. I have tried to identify any potential deductive, philosophical foundations of Chinese logic, and in doing so discovered that not only do they exist, but also that they are stable and robust enough to support a deductive interpretation.

These deductive, philosophical foundations are not the fictitious imaginings of a logician hoping to prove the worth and rationality of Chinese logic. It has been my assumption from the beginning that this research is inherently valuable, and also that Chinese thought is rational—an assumption based on the interpretive context of embodied cognition. Additionally, my methodology required that many of the claims made in this thesis apply only to particular thinkers (or even individual claims made by some thinkers). This characteristic is, I believe, a virtue and a necessary step away from making general statements based on insufficient data. The results of this paper are summarized as follows:

1. The Later Mohist theory of *bian* (辯) has a significant role for truth, as represented by the Later Mohist use of *dang* (當) as a relational verb linking debates to states of affairs in the world. This use suggests that the Later Mohists did indeed have a concept of truth (in Hansen’s understanding of the term ‘concept’). Moreover, this theory can be plausibly understood as a ‘naïve’ correspondence theory of truth (naïve by virtue of the Later Mohists willingness to treat *dang* as a primitive concept not requiring explanation).

2. The debate over Classical Chinese noun classification commits the basic error of applying a faulty and unwarranted analogy between nouns in Chinese and nouns in English. The question is not whether the lack of pluralization and the inability to directly take numerals suggests that Classical Chinese nouns are mass nouns; rather, the question is whether or not a mass-noun distinction can exist without syntactic markers for either mass nouns or count nouns.
3. *Shi* (實), as represented in the “Zheng Ming” chapter of the *Xun zi*, serves the same role that Platonic forms, ideas, meanings, abstract concepts, essences, universals, etc. serve in Western accounts of the one-many distinction. It does so by being a metaphorical extension of its basic meaning of ‘fruit.’ This, in some ways, suggests a parallel with the current theory of psychological essentialism found in folkbiology and cognitive science. While I believe that *shi* can be interpreted as a concept related to the notion of essences, I think that it is actually a more specific term than ‘essences.’ It is possible that *shi* invokes only the ‘innate potential’ part of the ‘essence’ concept in cognitive science. Although this understanding of *shi* requires a great deal more research, it presents an exciting possibility for expanding our understanding of Pre-Qin theories of meaning.
4. The Later Mohist “Canons” define and use *jian* (兼) and *ti* (體) in a manner that suggests that they are understood to represent the concepts of ‘class’ and ‘member.’ Evidence for this interpretation is based on both the choice of the word *ti* and the geometric metaphor used to explain the concepts. It is also the case that Mencius provides the best examples for interpreting *lei* (類) as a cognitive container metaphor, which suggests that when *lei* refers to natural kinds, it

indicates the basic level of categorization posited by folkbiology and cognitive science.

With the exception of conclusion 2, each of the conclusions above work together to establish the possibility (and plausibility) of a deductive interpretation of Chinese logic. Moreover, further research can—and should—be done in order to delve into the three positive conclusions (1, 3, and 4) to determine how applicable each may be to Chinese philosophy.

Chad Hansen's theory of Chinese logic has long dominated the field. This thesis was intended to provide a critical re-examination of the foundations of Chinese logic. While it has been the case that many of Hansen's arguments have not been considered the strongest for his conclusions, it is the conclusions that have most influenced scholars. Furthermore, Hansen's insights, when considered in its proper context, are the best and most elegant conclusions any scholar could hope to draw. Nevertheless, this thesis represents an important update on the methodology for studying Chinese logic: as this is the first study of Chinese logic to move beyond the old evolutionary and essentialist interpretive frameworks. This represents an initial step in freeing the study of Chinese logic from restrictive bindings of Hansen's work. Moreover, if my arguments are valid, my thesis provides all the necessary tools for future scholars to build their deductive interpretations.

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