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On the Universality of Argumentative Reasoning

Abstract

According to the argumentative theory of reasoning, humans have evolved reasoning abilities (usually known as 'system 2' or 'analytic' reasoning) for argumentative purposes. This implies that some reasoning skills should be universals. Such a claim seems to be at odd with findings from cross-cultural research. First, a wealth of research, following the work of Luria, has shown apparent difficulties for illiterate populations to solve simple but abstract syllogisms. It can be shown, however, that once they are willing to accept the pragmatics of the task, these participants can perform at or near ceiling. Second, historical, sociological and anthropological research has been used to claim that some Eastern cultures have not developed argumentation. These claims are the result of oversimplifications and of a selective view of the data. A closer look reveals instead very elaborate forms of argumentation, in Chinese culture particularly. Third, cross-cultural psychologists have carried out an extensive research program aimed at showing that Easterners do not rely on the principle of non-contradiction and that they use holistic rather than analytic thinking. A review of these experiments shows that no qualitative difference emerges in the way Easterners and Westerners deal with argumentation and that in the proper context both populations can easily have recourse to holistic or analytic thinking. It is possible to conclude from this critical review that the reasoning skills involved in argumentation seem to be universal even though they can be used in different ways in various cultural contexts.

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On the universality of argumentative reasoning

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Abstract. According to the argumentative theory of reasoning, humans have evolved reasoning abilities (usually known as 'system 2' or 'analytic' reasoning) for argumentative purposes. This implies that some reasoning skills should be universals. Such a claim seems to be at odd with findings from cross-cultural research. First, a wealth of research, following the work of Luria, has shown apparent difficulties for illiterate populations to solve simple but abstract syllogisms. It can be shown however that once they are willing to accept the pragmatics of the task, these participants can perform at or near ceiling. Second, historical, sociological and anthropological research has been used to claim that some Eastern cultures have not developed argumentation. These claims are the result of oversimplifications and of a selective view of the data. A closer look reveals instead very elaborate forms of argumentation, in Chinese culture particularly. Third, cross-cultural psychologists have carried out an extensive research program aimed at showing that Easterners do not rely on the principle of non-contradiction and that they use holistic rather than analytic thinking. A review of these experiments shows that no qualitative difference emerges in the way Easterners and Westerners deal with argumentation and that in the proper context both populations can easily have recourse to holistic or analytic thinking. It is possible to conclude from this critical review that the reasoning skills involved in argumentation seem to be universal even though they can be used in different ways in various cultural contexts.

Keywords: Argumentation; Reasoning; Cross-cultural differences; Dual-process theory; Contradiction;

1 Introduction

It has become increasingly common in many areas of psychology to divide the mind in two broad categories of processes. The first category comprises mechanisms that are typically fast, frugal, and often unconscious. These intuitions (or system 1 reasoning) guide successfully most of our actions and inferences (Bargh & Chartrand, 1999). Mechanisms belonging to the second category— system 2 reasoning, or reasoning proper—form a negative of the former: they are slower, require more effort, and they tend to be conscious. Such a distinction was first developed within cognitive psychology (in the fields of attention [Posner & Snyder, 1975], memory [Schacter, 1987] and learning [Berry & Dienes, 1993; Reber, 1993]) and social psychology (in the field of persuasion and attitude change [Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986]). More recently it has invaded the whole of social psychology (Chaiken & Trope, 1999; Wilson, Lindsey, & Schooler, 2000), as well as reasoning (Evans & Over, 1996; Sloman, 1996; Stanovich, 2004) and decision making (Kahneman, 2003; Kahneman & Frederick, 2002, 2005). Throughout this article, ‘reasoning’ will be used to refer only to what is usually called system 2, analytic or rule-based reasoning—a tiny portion of our mental operations that has attracted a lot of work in psychology.

Distinctions drawn from such different fields as attention and stereotyping are bound not to overlap perfectly. Even within the more restricted area of reasoning there are substantial differences between competing dual process theories (Osman, 2004). I will focus here on a particular version of this distinction, that between *intuitive and reflective inferences* (Mercier & Sperber, 2009). This theory proposes a principled distinction between the two categories of processes. Intuitive inferences (or *intuitions*) are the most general type of inference: the cognitive act of producing an informationally enriched output on the basis of a given input. Such inferences can be found in the visual or motor systems (Kersten, Mamassian, & Yuille, 2004; Wolpert & Kawato, 1998) as well as in higher cognition (mentalizing [Baron-Cohen, 1995] or naïve biology [Medin & Atran, 2004] for instance). When we draw such inferences, we are unaware of the reasons that have led us to

produce a given output. On the other hand, reflective inferences (or *reasoning*) are characterized by the attention they pay to reasons. More precisely, reflective inferences are based on an examination of reasons in order to determine whether they warrant accepting or rejecting a given conclusion—they are thus a special type of metarepresentational mechanism (Mercier & Sperber, 2009; Sperber, 2000). For instance, when we ponder about the pros and cons of a given decision or conclusion, we are using reflective inferences: once our mind is set, we can give an explicit and accurate account of the reasons that have led us to this decision or conclusion.

Here is not the place to delve on the precise differences and commonalities between this proposal and other dual process theories, but one of its most original facets needs to be emphasized. The distinction between intuitive and reflective inferences comes hand in hand with the *argumentative theory of reasoning* that bears on the *function* of reasoning (Mercier & Sperber, In press; Sperber, 2000, 2001). Other dual process theories of reasoning share a ‘Cartesian assumption’ that reasoning evolved mostly for individual purposes: reasoning should help us create better beliefs, reach knowledge, and make sounder decisions. Pointing out several flaws in this assumption, the argumentative theory of reasoning suggests instead that reasoning is a profoundly social mechanism whose function is to *find and evaluate arguments* so as to convince other people and be convinced only when it is appropriate. The precise evolutionary rationale for this hypothesis need not concern us here (see the above references), and I will only skim over some of the empirical support that can be gathered in its favor (see Mercier, Submitted; Mercier & Sperber, In press for a full account). This hypothesis successfully predicts the following (tentative) observations: (i) people are good at arguing; (ii) people reason better in argumentative contexts; (iii) reasoning is characterized by a robust and prevalent confirmation bias (a very useful feature in a debate but a terrible flaw for a prop of individual cognition); (iv) when reasoning is used in decision making, it drives towards decisions that are easy to justify but not necessarily better otherwise.

According to this theory there is no reason to expect a special kind of selection (such as sexual selection or frequency dependant selection) to have had strong effects on the shaping of our reasoning skills. This implies that these abilities should be shared by all (non pathological) human populations (Tooby & Cosmides, 1990). The argumentative theory is not alone in making such universal claims. Other dual process theories also claim that our (system 2) reasoning abilities are the result of evolution and are therefore expected to be universal. This may cause many a cross-cultural psychologist to cringe. As a matter of fact, most of the studies cited as supporting the argumentative theory of reasoning (or, more generally, dual process theories) have been conducted among Westerners or, as Henrich and colleagues put it, among WEIRD people—individuals from Western, Educated, Individualistic, Rich, Democratic societies (Henrich, Heine, & Norenzayan, In press). Henrich et al. point out that the—sometimes implicit—claims of universality for psychological traits are often based on samples only drawn from such populations. Cross-cultural investigations have revealed however that in a disquieting number of cases the results obtained in these WEIRD populations lie at one extreme of the distribution: many claims of universality have been made on the basis of what could be deemed an outlier. Reasoning and argumentation may be a case in point. Is it not possible that those who advanced the argumentative theory of reasoning were unduly influenced by a culture (French academia) that encourages debate and contradictory discussion? More to the point, the American undergraduates who form the vast majority of the subject pool also belong to a culture in which debate is generally cast in a very positive light. Some researchers think that at least a modicum of formal training is being necessary to the acquisition of basic reasoning skills (Braine, 1990; Scribner, 1977). Others claim that whole cultures spurn debate that threatens social harmony, favoring more conciliatory ways of conflict resolution (see the multiple references in section 3). If these claims were to be borne out, they would spell the demise of the argumentative theory of reasoning.

This article aims at showing that the argumentative theory of reasoning can survive these attacks unscathed. *Au contraire*, it stands in a good position to encompass different 'styles of

thought' as it distances itself from the Western emphasis on abstract, deductive reasoning. The first objection to be tackled will be that of the necessity of schooling. Recent work will be reviewed showing that modest pragmatic modifications make decontextualized (or abstract) reasoning much easier for the illiterate populations who are often claimed to lack this ability. I will also provide some preliminary anthropological evidence supporting the idea that argumentation can be efficient even when some of the most basic linguistic tools associated with it are lacking. The second source of criticism to be addressed comes from characterizations of Easterners as lacking argumentation (Becker, 1986). According to several anthropologists, linguists, sociologists and historians, several factors concur to prevent Easterners from effectively using argumentation. The two main factors are languages that render the expression of logical thought hard or even impossible and dogmas very inimical to debate in any form. The most extreme forms of these views may not be fashionable anymore, but run down versions are still widely influential, making their rebuttal worthwhile.

Among the people heavily influenced by such views are several cross-cultural psychologists who have aimed at a very ambitious comparison of Western and Eastern minds (Nisbett, 2003; Nisbett, Peng, Choi, & Norenzayan, 2001). Several of their conclusions, based on a rich set of experiments, may be problematic for the argumentative theory. Easterners are supposed to have little use for a principle of non-contradiction, a necessary prerequisite of argumentation (Peng & Nisbett, 1999). Their 'Holistic' style of thinking is "associative, and its computations reflect similarity and contiguity", it relies "on experience-based knowledge rather than on abstract logic" (Nisbett et al., 2001, p. 293). Such traits are much less conducive to good argumentation than the Western 'analytic' thinking that "rest[s] in part on the practice of decontextualizing structure from content, the use of formal logic, and avoidance of contradiction" (Nisbett et al., 2001, p. 293). The last part of this article will be dedicated to this strand of research, partly as a critique, partly as a tentative reinterpretation, trying to pinpoint the commonalities and differences between Eastern and Western argumentative contexts.

2 Differences introduced by schooling

The domain of reasoning has been of long standing interest to cross-cultural psychologists. Some of the first studies were sparked in reaction to Lévy-Bruhl's famous description of the 'prelogical mentality' (Levy-Bruhl, 1910). Up to the end of the 19th century, many missionaries and adventurers reported a total lack of understanding (and interest) among native populations for any 'abstract' thought. Lévy-Bruhl tries to fight the conclusion that this apparent limitation is due to "the feebleness or torpidity of their mind" (Levy-Bruhl, 1910, p.32). Instead, he delves on the numerous observations that the very same native who seem reticent to engage in abstract thought are very much at ease in more pragmatic matters to conclude that they must be endowed with profoundly different reasoning abilities. If this is certainly a step forward, Lévy-Bruhl's view of the 'primitive mentality' is still somewhat pejorative, inasmuch as this mentality is "uncultivated in following a chain of reasoning which is in the slightest degree abstract" (p. 22), and "almost exclusively concrete by nature" (p.433).

Lévy-Bruhl's work sparked an important reaction, mostly in the Anglo-Saxon anthropological world (Boas, 1938; Rivers, 1926, see Leroy, 1927 for a French reaction). By bringing new evidence to the fore, as well as by reinterpreting some of Lévy-Bruhl's own data, these scholars claimed that native populations everywhere could respect the same logical laws as 'civilized' people. That was the state of the art when Luria famously decided to investigate experimentally the psychological mechanisms of illiterate populations living in remote regions of Uzbekistan. While this tends to be overseen by cross-cultural psychologists, it is worth emphasizing that Luria's objective was, in part, to rebut Lévy-Bruhl's critiques and to show that "higher cognitive activities remain sociohistorical in nature" (Luria, 1976, p.8). It is to Luria's results, and the research program they have generated, that we now turn.

Luria's experiment on deductive reasoning used syllogisms such as "In the Far North, where there is snow, all bears are white. Novaya Zemla is in the Far North. What colors are bears there?" (Luria, 1976, p.107). Among peasant, illiterate populations performance on such problem was very poor: under 30% of the participants were able to draw the apparently trivial conclusion. Using the same methodology, similar results were subsequently obtained by teams of researchers working in other illiterate populations in Africa and Central America (Cole, Gay, Glick, & Sharp, 1971; Scribner, 1975, 1977; Sharp & Cole, 1975). In all cases, comparisons were drawn with literate populations belonging to the same culture. For instance, Luria would pick younger participants who had just started school and observe perfect performances on the same problems (Luria, 1976, p. 116, see the above references as well). This led him and his followers to conclude that schooling was both necessary and sufficient to enable the development of abstract reasoning. It is possible however to offer an alternative explanation for their, admittedly very robust, findings (for related proposals, see Hamill, 1990; Hutchins, 1980).

First it is important to stress that the difficulties hardly come from reasoning—the reflective inference from premises to conclusion—itself. Starting with Lévy-Bruhl, protagonists in this debate have been unanimous in the recognition of the natives' ability to reason on familiar, interesting problems. This point has been driven home experimentally by the results of Luria, Scribner, Cole, Hamill and others. Hamill, for instance, observed perfect performances for his participants (illiterate Native Americans) on a large number of syllogisms using familiar content (Hamill, 1990). Given that participants are able to draw an inference when they believe the premises to be true, but not when they have to temporarily assume them to be true, the difficulty has to reside in this extra step of abstraction. The question then is: Do they not perform this extra step for lack of *ability* or because they are *unwilling* to do so? After all, why should they accept, however temporarily, everything the experimenter is saying? Used that we are to empty school exercises, we take for granted something that is, as a matter of fact, utterly strange. Creating random facts out of the blue and trying to draw

inferences from them is not what you would otherwise expect of a rational individual¹. Reasoning is costly and tiring, and there are plenty of other things to do with one's mind. Outside of a specific institutional context, we tend to see anyone intensely engaging in such activities as, well, slightly deranged (a common popular perception of academics). Moreover, by accepting—however temporarily—something that has no reasonable grounding, these participants run the risk of being perceived as gullible².

Several results support the idea the poor performances are driven by the unwillingness of the participants to accept random, unfamiliar premises as true and that, once they do so, their reasoning is very felicitous. First, both Luria and Scribner tested the recall of the premises of the syllogisms. The vast majority of the participants could not accurately recall the two premises (Luria, 1976, p. 103ff; Scribner, 1975, p. 160ff). This shows that they were not ready to invest too much mental energy in the precise game the experimenter wanted to play. More to the point, when participants were willing to consider the premises as true, their performances improved—sometimes dramatically. Luria observed this phenomenon when participants prefaced their answers by “from your words I can gather that” (Luria, 1976, p.116). Scribner's analyses are much more striking. Participants' justifications for their answers were coded as either empirical (“I don't know the man in person”) or theoretical (using only the words of the experimenter, often prefaced by “if you say” for instance). A theoretical justification implies a temporary acceptance of the premises. Looking at different populations (Mayan and Vai), she observed that less than 2 percent of the wrong answers were

¹ The insistence on logical validity as being detached from the truth of the premises is something very peculiar to our Greek heritage. In both Indian Buddhist logic (Matilal, 1998) and its Chinese heir (Harbsmeier, 1998), arguments drawn from false premises would be invalid, and arguments without pertinent premises would be “quite out of place” (Harbsmeier, 1998, p. 405).

² As a side note, it is interesting to notice that Lévy-Bruhl himself partly based his evaluation of the “primitive's distaste for the discursive operations of thought” (Levy-Bruhl, 1910, p. 15) on the fact that natives would not accept conclusions based on reasoning from unfamiliar premises. This observation, in turn, is drawn from the reports of Jesuit missionaries depressed by their would-be flock's unwillingness to accept the message of the Gospels. One of them lamented that the “truths of the Gospel would not have seemed admissible to them had they been founded on reason and good sense alone” (quoted in *ibid*, p. 21). Another had to put up with a pigheaded recalcitrance to accept invisible things: “Can the God of the white men be seen by our eyes? ... and if Morimo (God) is absolutely invisible, how can a reasonable being worship a hidden thing?” (quoted in *ibid*, p. 23). Who was being irrational, the Jesuits or the natives, is not entirely clear.

associated with theoretical justifications (!) (Scribner, 1977, p. 489). As soon as participants gave theoretical justifications, they got the problems right. However, such justifications were typically given by less than a third of the participants, which explains the poor overall performance. Still, this shows conclusively that reasoning itself is far from being faulty, even when it bears on unfamiliar premises.

Finally, Paul Harris and his collaborators have conducted a fascinating series of experiments showing that some contexts make participants more willing to temporarily accept unfamiliar premises. First, they showed that children (as young as 4-years-old) showed more willingness to reason on unfamiliar premises when they were put in a clearly imaginary context (another planet, a story) (Dias & Harris, 1988, 1990; Leavers & Harris, 1999). More to the point, they also adapted their methodology to work with illiterate adults from Recife, Brazil (Dias, Roazzi, & Harris, 2005). Again, they observed that participants were more willing to reason on unfamiliar premises, or even with premises contrary to experience, when they were framed in the context of 'another planet'. This manipulation provided a context that the participants might find more entertaining, as well as a safeguard against saying anything ungrounded about the real world.

From these results we can conclude the following. First, in every population studied, some participants are spontaneously willing to go along with the experimenter's game ("there are minds among them quite as capable of scientific thought as those of Europeans", as a Jesuit missionary would put it, cited in Levy-Bruhl, 1910, p.22). Second, it is possible to have more participants behave in that manner simply by framing the problems in a more felicitous context. And, third, when they are willing to play the game, participants perform at ceiling. This should put to rest the claims that natives and/or illiterates are incapable of abstract thought.

Before turning our attention to the alleged 'lack of argumentation in the Far-East' several anecdotes are worth mentioning in relation to the topic of reasoning and argumentation. The theory defended here predicts that people should be good at arguing and that they should reason more

effectively in argumentative contexts. When the participants in the experiments reported above had to defend their answers to the experimenter, the “chain of reasoning leading to the answer ... was found to follow logically from the evidence used by the subject” (Scribner, 1977, p. 488). One of Luria’s participants had to use analogical reasoning (“our tsar isn’t like yours”, Luria, 1976, p. 109) to explain to this hapless foreigner why he could not speak of places he did not know. Moreover, when the very same people were observed in more argumentative contexts—such as a law court—they displayed very skilful reasoning with, in one example, “explicit use of a hypothetical argument and juxtaposition of contradictory instances” (Cole et al., 1971, p. 182, see also Hutchins, 1980)³. Finally, when Cole and colleagues gave groups the syllogisms that prove so difficult for individuals, they noted that “when engaged in group discussion, there was no difficulty in responding to such oral syllogisms” (Cole et al., 1971, p. 186). More generally, small human groups all over the planet have recourse to argumentation in the context of group decision making (Boehm, 1996) and of trials and judicial decisions (see Nader & Todd, 1978 for an introduction to the field of legal anthropology), so these conclusions should come as no surprise to most anthropologists.

3 East Asian attitude towards argumentation

After the problems illiterates were supposed to face with abstract thought, the second issue that will be tackled is that of the “lack of argumentation and debate in the Far-East” (Becker, 1986). There is a long standing claim that “the use of public speaking for the debating of conflicting viewpoints ... has generally been unacceptable in the Orient” (Becker, 1986, p. 76). Partly based on this claim, Richard Nisbett and his collaborators have developed a rich research program of cross-cultural psychology that aims at showing, *inter alia*, that Easterners and Westerners reason in “qualitatively different ways” (Nisbett et al., 2001, p. 305). The next section will be dedicated to some of their empirical results. But before this, it would be good to question some of the sources they rely on.

³ Interestingly, their reasoning shares the flaws of ours as well as its brilliance. In the same example of court law one of the participant presented a very selective version of the evidence to support her contention, displaying a strong confirmation bias (which is not that surprising given the context).

Here is a fairly representative claim emerging from this literature: “the Chinese and people from other Eastern Asian cultures are less likely than Westerners to engage in debates and formal argumentation” (Peng & Nisbett, 1999, p. 747). Such an assertion can be read at different levels. Peng and Nisbett might be talking about the refined, formalized, institutional process of argumentation that can be found in courts or parliaments. This does not preclude the use of arguments in more casual circumstances—at home, at work, among friends. In this case, the truth of this statement is not a concern for the hypothesis that humans are endowed with an evolved ability for argumentation. That some cultures lack formal mathematics is no argument against their member possessing naive mathematical skills (Dehaene, 1999). But in the course of defending this claim its partisans have recourse to arguments that have much broader consequences, entailing that East-Asians should have difficulties with argumentation more generally, or even that they have “no standards for matching propositions with other propositions (coherence) or with other states of affairs in the world (‘correspondence tests of truth’)” (Becker, 1986, p. 78). If a large swath of human population was truly deprived of skills that are so fundamentals to any argumentative activity that would certainly prove fatal for the theory defended here. One of the sources for these strong claims is linguistic analysis.

3.1 East-Asian languages and logical thought

In his widely cited book, Hajime Nakamura chastises the Chinese and the Japanese languages for their vagueness and the obstacle it sets to “expressing logical conceptions” (Nakamura, 1964, p. 534, see also Logan, 1986)⁴. Later, Alfred Bloom put forward a related but much more restricted claim that the Chinese language could not express counterfactuals and that, as a result, Chinese people had the greatest difficulties understanding such statements (Bloom, 1981 see also Hall & Ames, 1987). The most comprehensive rebuttal of these claims is maybe found in the work of Christoph

⁴ It is interesting to note that Nakamura started his comparative project right after Japan’s defeat in World War II (Nakamura, 1964, p. xiii), at a time when there was a “strong inclination to view “Asian” conditions critically in comparison with a “Western” ideal” (Oguma, 2007).

Harbsmeier (see Harbsmeier, 1981 for the counterfactuals). In the volume of *Science and Civilisation in China* dedicated to language and logic he shows convincingly that all the logical relations required for logic were available in classical Chinese (Harbsmeier, 1998). Indeed, some aspects of classical Chinese were more 'logical' than its Greek counterpart (Harbsmeier, 1998, p. 113). The expressive power of Chinese was not lost over time: in 1631, a Chinese scholar, with the help of a Jesuit missionary, published a translation of Aristotle's *Categories*, the epitome of Greek logical thinking⁵ (see the fascinating analysis of this translation in Robert Wardy's *Aristotle in China* [2000]). Without denying that languages can have interesting effects on thought, they rarely, if ever, set stringent boundaries: "language in no deus ex machina to account for philosophy. Neither is eternally fixed; both change, and the changes in the intellectual community are what move a language into more abstract and refined terms" (Collins, 1998, p. 10).

That language itself is hardly an obstacle to argumentation can be illustrated by an extreme example that takes us very far from ancient Chinese literature, towards the Amazonian forest. The Pirahã are a small tribe in northern Brazil that has recently sparked a lot of interest among psychologists, linguists and anthropologists. Dan Everett, a missionary turned linguist who has had very extensive experience of life among the Pirahã claims that their language lacks words or markers for conditionals, disjunctions, conjunctions, comparatives and quantifiers (Everett et al., 2005)⁶. However, that does not stop them both from understanding arguments (Everett once had to argue his way out of a potentially lethal situation, Everett, 2008, p. 64) and from frequently arguing effectively with him or between themselves (Everett, 2008; Everett et al., 2005).

Even if one accepts that language can hardly place any strong constraints on basic argumentative skills, it is still possible to argue that Chinese and Japanese traditions never developed

⁵ In which the word used to translate 'logic' is 'pien', which can mean 'to tell apart, to distinguish, to discriminate', and is a cognate of 'pien' 'to argue, to dispute' (Wardy, 2000, p. 99).

⁶ He also claims that they have no true color terms or number terms (including 'one'), and that their language lacks recursion. Rather unsurprisingly, these claims have been widely debated (see Nevins, Pesetsky, & Rodriguez, 2007 and Everett, In press for Everett's answer)

a taste for arguments and debates. If the reasons are not to be found in intrinsic linguistic limitations, they may lie in more general social and cultural pressures.

3.2 Socio-cultural arguments

Scholars have noted that many Eastern doctrines hold an apparently bleak view of argumentation. Thus one can read in the *Analects* that “The superior man is slow to speak but quick to act”, in the *Tao Te King* that “A good man does not argue; he who argues is not a good man”, and Rinzai Zen scorns “hell-producing” eloquence (all three citation from Becker, 1986, see Becker, 1983 and Morrison, 1972 for Japan more specifically). There is no denying that such statements are recurrent in this literature. But do they represent the only available point of view? And are people, including their authors, abiding by these statements? The answer to both of these questions is a resounding ‘no’⁷.

In order to put the apparent rejection of debate and argumentation by Eastern doctrines in perspective, it is possible to point out the many similarities between Eastern and Western attitudes towards logic and argumentation. Geoffrey Lloyd has convincingly argued that the Chinese and the Greek thoughts are strongly overlapping (Lloyd, 1990, 1996, 2006, 2007), and I will only give a few illustrative examples here. Before China was unified by the Qin dynasty in the 3rd century BCE, it was composed of many states frequently at war with each other. During this so-called Warring-States Period, that lasted more than two centuries, there was a “flourishing of contending schools [that] bears witness to the social change and political turmoil of the time, the rise of liberal thinking, private education, and wide circulation of books” (Chang, 2007, p. 87). Most interesting here is the Mohist

⁷ Another argument put forward by Nisbett and his colleagues to explain the value placed on social harmony in the East, and its supposed adverse consequences for argumentation, is that in order to carry out the required agricultural work, there had to be strong cooperation (Nisbett et al., 2001, p. 303). This, however, is probably even truer of Sumer where the need for efficient, state controlled irrigation was extremely strong. But that did not stop the Sumerians from creating a rich tradition of poem-debates that could be quite subversive (Ponchia, 2007). Nisbett et al. also note that “the West during the Middle Ages was similar economically and socially to ancient China in many ways” (p. 295). But it is precisely during the Middle Ages that the tradition of debate (the *disputatio*) and logic (within scholasticism) was rekindled in the West.

school of thought. Founded by Mo Zi in the 5th century BCE, this school was “relying heavily on deductive patterns” made possible by “their strength in geometry, a firm understanding of class inclusions and quantification, and an interest in science” (Jensen, 1992, relying on Garrett, 1983). This “single small school” (Becker, 1986, p. 89) tends to be pushed under the Confucian rug but in fact, “at its peak in the 4th and 3rd centuries B.C., no school was more influential” (Fraser, 2007). Besides their content, there are remarkable historical parallels between the history of Mohist and Greek logic. Both were created partly as a response to what they deemed to be the ‘sophistry’ of their predecessor who could argue for both sides of every issue (Harbsmeier, 1998, p. 114). And both temporarily lost (admittedly for a longer time in China) their prominence partly as a result of religious and political changes (Huff, 2003). While in China the first Qin emperor “is alleged to have suppressed and to have attempted to burn all the books he could lay hands” in order to consolidate its Legalist support (Lloyd, 1990, p.110)⁸, around the Mediterranean Paul was preaching that “the more they called themselves philosophers the more stupid they grew ... they made nonsense out of logic and their empty minds were darkened” (Romans 1:20,21, quoted in Freeman, 2002, p.120; see Given, 2001 on Paul’s own skillful use of sometimes deceptive rhetoric)⁹. Even if other factors may have played a role in the neglect of Mohism once its supporting institutions had crumbled, this very destruction was caused by a political crackdown and not by Mohism’s lack of appeal¹⁰.

Another reason invoked by Chinese philosophers to reject the abstract mind games of logicians was their apparent futility. Thus, Hsün Tzu chastises his predecessors who “love to sort out strange theories and play around with abstruse expressions” (quoted in Harbsmeier, 1998, p.348). A cursory look at the famous white horse dialogue, for instance, makes one empathize with this evaluation. Some of the arguments that will be put forward by Francis Bacon and many others

⁸ For all their supposed tolerance for debate, Athenians also knew that a good auto-da-fe could be fun, as illustrated by their burning of Protagoras’ books (Hussey, 1972, p. 116, cited in Billig, 1996).

⁹ A few centuries later, Augustine would chastise “the man with a reputation of eloquence” (Augustine, 1991, p. 3), ironically with the help of “the full arsenal of Latin rhetorical devices” (McNeely & Wolverton, 2008, p. 47).

¹⁰ It is noteworthy that the fate of the Mu‘tazilah school within Islam, that most strongly engaged in the use of reason and debates to understand the Qu‘ran, is somewhat similar to the fate of Mohism (Huff, 2003)

against the excesses of scholasticism bear a strong resemblance to those of Hsün Tzu. Finally, another interesting parallel is the relationship of logic to morality. That arguments can make people stray from the good is one of the main reproaches formulated against argumentation by Chinese thinkers (as is the case of many a religious thinker in the West). But this does not imply the wholesale rejection of arguments or of logic; instead, the dominant attitude is that “logical argument is considered as a handmaid of moral orthodoxy” (Harbsmeier, 1998, p. 277), the very same view that has been expounded by some of the most prominent Christian thinkers, from John to Aquinas, who “viewed natural philosophy ... as handmaiden to theology” (Grant, 2001, p. 184).

It is also relevant to notice that some of the philosophical concepts that seem to negate the possibility of discussion were often introduced for argumentative or even rhetorical purposes. Thus Becker cites this anecdote as supporting a relativistic stance within Chinese thought: “In a classic dialogue with his friend Hui, as they walked along a dam looking at the fish in the river, Chuang-tzu said, ‘The white fish swimming easily in the river are so happy!’ Answering with Chuang’s own relativistic logic that no one can know another’s mind, Hui responded: ‘You are not a fish. How do you know its happiness?’ To this, Chuang retorted again, ‘You are not I. How do you know that I do not know?’” (W. T. Chan, 1963, p. 210, quoted in Becker, 1986). While a relativistic stance may not favor logical discussion at a reflective level, it clearly does not preclude its advocates from making clever arguments. Moreover, Lloyd points out that this type of relativistic point of view, far from being argumentatively innocuous, was sometimes used in “withering dialectical attacks on other philosophers’ claims to wisdom and in particular on any pretence at certainty” (Lloyd, 1990, p. 115).

Even though one can find many commonalities in the argumentative repertoires of ancient Chinese and Greek cultures (see for instance Harbsmeier, 1998, p. 278ff) as well as in the position adopted towards debate at different points of Eastern and Western history, some differences remain significant. Even the defenders of Chinese argumentation note that “argument from authority has

been and is a dominant mode of argumentation in much of Asian discourse” (Jensen, 1992)¹¹ and that “logical argumentation was not the preferred way of justifying or supporting one’s thesis in ancient China. What then was the preferred way of supporting one’s claims? It was through what may be called paradigmatic arguments from historical examples” (Harbsmeier, 1998, p. 267). Maybe the most important difference was that the official rejection of debates and argumentation, mostly by the Confucians, was much longer lasting than its Western, Christian counterpart. But to what extent was this official rejection efficient in preventing debates from occurring?

It is well known in anthropology that people can hold seemingly strange attitudes but still behave in a much more ‘normal’ manner than would be predicted on the basis of these attitudes, as if most of their inferences were effectively decoupled from their more reflective beliefs (Sperber, 1975, 1997). Likewise, social psychologists have observed again and again surprisingly weak correlations between attitude and behavior (Ajzen & Fishbein, 2005). It is therefore very plausible to expect that for all their maxims and precepts, Easterners will still be frequently seen sparring in debates.

To support this point, it is possible to draw both from intellectual history and from what we can gather from the behavior of laypeople, but before doing so it is necessary to point out an important source of bias in the way debates have been reported in ancient Chinese literature. It has been concluded from this literature that the “lack of a controversial spirit of dialogue in ancient China is noteworthy” (Nakamura, 1964, p. 186). ‘Lack’ is certainly too strong a word when “just about every issue of policy and tactics could be and was the subject of heated argument” (Lloyd, 2007, p. 10). But more importantly there is strong ground to expect that, given the scribal traditions in China, most of the debates were not reported, only their results were: “If the writing culture encourages

¹¹ While in the West one can find, very early on, statements such as: “For every authority which is not upheld by true reason is seen to be weak, whereas true reason is kept firm and immutable by her own powers and does not require to be confirmed by the assent of any authority.” (Eriugena, 867, Book 1, chapter 69). But a few centuries later Eriugena’s books were to be burnt by order of the Pope, showing once again that this depreciating stance towards authority was not exactly consensual in the West.

the summarizing and digesting of scientific results rather than the delineation of the intellectual path by which they were achieved, then there is nothing objectively textual for the logician to pick up and analyse in detail” (Harbsmeier, 1998, p. 418). So any assessment of the role of argumentation and debate in the evolution of Chinese thought will sometimes have to proceed through a reconstruction of the debates that must have taken place, and risks understating their importance¹².

Despite these limitations, a great many arguments are reported in this literature, starting from Confucius himself who sometimes uses clever syllogisms to persuade his disciples of counterintuitive conclusions (see for instance Harbsmeier, 1998, p. 270). The following growth of Confucianism should be understood “in terms of its ‘reacting to criticisms of opponents,’ and [we should] see the ‘advance and changes’ of any Chinese discourse as a result of its ‘engaging in philosophical debate with rival doctrines.’” (Liu, 1996, quoting from Hansen, 1992; see Combs, 2004 for similar arguments regarding Daoism). More generally, “there is a growing recognition of the central role played by argumentation in the production—and interpretation—of pre-Han texts” (Liu, 1996, p.33). Debates were also very much present in religious life: “From about the fourth to the tenth century Buddhist monks in China engaged in formal, semi-public, religious disputation” (Garrett, 1997, p.195). Debates between “Taoists, Confucians, and Buddhists” were taken very seriously, with their loser being “defrocked, and their temple properties confiscated” (Collins, 2002, p. 67). In the case of Japan, Branham notes that recent historical work has “revised the portrait of Japan's past. What has emerged is not the “relatively peaceful” arhetorical society described by Becker and others, but a country whose past three hundred years have been marked by great ideological and often physical conflict, and whose disputes have often been conducted and recorded in the form of debates” (Branham, 1994 see also Najita & Koschmann, 1982). And, as in China, “argumentative sermons and public addresses delivered by scholars to commoners were common in

¹² The transformation of long, sometimes heated arguments into straightforward positive proofs is also a landmark of the scientific literature in the West, since its Galilean beginnings (see Zuber, 2008 for Galileo).

pre-Meiji Japan, sometimes delivered to crowds numbering in the thousands” (Branham, 1994)¹³. Far from abiding by their own precepts, we can see that scholars in China and Japan were prone to dissention and debate. But they were in their majority part of a privileged elite. Maybe laypeople would be more subservient?

“In Chhi there was a servant who refused to commit suicide for the sake of his master who got into trouble. In the street he met an old acquaintance who said: ‘How come you’re still alive?’

‘Well, everyone serves others to gain an advantage. Dying is not an advantage. Therefore I refused to die.’

‘But will you be able to face other people (having failed to commit the obligatory suicide)?’

‘Well, do you imagine I could face them if I were dead?’” This anecdote collected by Lü Pu-Wei in the 3rd century BCE (Harbsmeier, 1998, p. 279) reflects both a clear lack of respect for the customs and wonderfully ironical argumentative skills, all from a mere servant. Another story tells how young boys were poking fun at Confucius himself for his inability to solve simple logical riddles (Harbsmeier, 1998, p. 269). When Becker tries to argue from the fact that “throughout Chinese history, there were purges and book-burnings, when all but the few texts approved by officialdom were destroyed, and possession of contraband books carried the death penalty” (Becker, 1986, p. 77) to the conclusion that there was no debate in China, it is easy to retort that if it were not for the social unrest fueled by these incendiary books, there would be no need for such drastic actions. Turning to the present, we observe that “Almost 10,000 Japanese university students study debate each year and most of them actually participate in debate matches. Next to the United States of America, Japan has the largest amount of debating in the world.” (Klopf, 1979, p. 1, quoted in Hazen, 1984). This is hardly to be expected of a nation fitting with the description of a “land covered with reed and rice-ears, [where] they haven’t argued since the time of gods” (Kakinomoto-no-Hitomaro,

¹³ This type of debate had its own name (‘rongi’), and another word for debate (‘tooron’) is attested in the 12th century (Inoue, 1996).

quoted in Nakamura, 1964, p. 539)¹⁴. Moreover, studies that have compared the argumentativeness of different populations (using the scale developed by Infante & Rancer, 1982) have found only minor and inconsistent differences between Easterners and Westerners (Aune, Hunter, Kim, & Kim, 2001; Bresnahan, Shearman, Lee, Ohashi, & Mosher, 2002). Finally, experiments on collaborative reasoning show that Chinese and Korean children can shed very quickly the constraints that may be imposed during interactions with teachers to become fierce arguers between themselves (Dong, Anderson, Kim, & Li, 2008).

The evidence reviewed above leaves little ground to expect substantial differences in argumentative abilities between Easterners and Westerners. But even if their foundations are shaky, cross-cultural psychologists have built on top of them an important experimental edifice, to which I will turn shortly, after another short historical digression.

4 Cross-cultural differences in reasoning and in dealing with contradiction

4.1 Dealing with contradiction

Among the most provocative claims to be used by cross-cultural psychologists is the idea that the Chinese tradition lacks a principle of non-contradiction: “Even the highest authorities on logic in China literally did not know what they were talking about, and frequently contradicted themselves *without being bothered by it!*” (Becker, 1986, p. 84)¹⁵. Such ideas were already expressed at the

¹⁴ It is quite ironical to contrast this restriction of argumentation to the golden time of the Gods in Japan with the opposite stance taken by some Jewish scholars, according to whom “Initially there was no controversy in Israel” (Tosefta Sanhedrin 7:1 quoted in Ben-Menahem, 2007, p. 49). Should one conclude that argumentation is seen in a better light in Japanese than in Jewish culture? Obviously not, but this goes on to show that by using quotes one can cherry pick his way to more or less any conclusion.

¹⁵ If this were true, they would be sharing this trait with Lévy-Bruhl’s ‘prelogical’ people, whose thought “does not bind itself down as our thought does, to avoiding contradictions” (Levy-Bruhl, 1910, p.63). In fact some of these ‘prelogical’ people (Neo-Zealanders in this case) were in fact keen on spotting any inconsistency between

beginning of the 20th century; according to Marcel Granet, “the principle of contradiction does not preoccupy the Chinese” (Granet, 1934, p. 385, quoted in Harbsmeier, 1998). Such grand claims are contradicted by a wealth of historical evidence. Chinese philosophers were wont of pointing out internal contradictions and saw it as very serious problem, starting with Mo Zi, for whom “It’s impossible that both sides’ claim are right” (quoted in Chang, 2007, p. 93). One could argue that Mohism is in this respect an exception, but that would fly in the face of such Confucian statements as “to wish something to live and (at the same time) to wish it to die is confused” (quoted in Harbsmeier, 1998, p. 214). Chinese scholars also used contradictions between words and deeds, between statements, or between actions as rhetorical weapons against their opponent’s position¹⁶, and they were aware of the need to reply when caught uttering such contradictory statements (Harbsmeier, 1998, p. 213ff; see also Leslie, 1964).

It would also be easy to find plenty of statements in the Western tradition denying the importance of contradiction. To give but one example, here is Tertulian: “The son of God is dead: this is to be believed since it is absurd. Having been buried he rose again: this is certain, since it is impossible” (quoted in Lloyd, 1990, p.24, see Ben-Menahem, 2007, p. 25 for an instance in Jewish scholarship). In any case it seems reasonable to assume that such statements, Eastern or Western, would not detract people from an intuitive application of the principle of non-contradiction. As Lloyd says: “When Aristotle first formulated the principles of non-contradiction and of excluded middle, he evidently aimed to make explicit rules that are implicit in all human communication, the rules, indeed, that state the conditions of intelligible communication” (Lloyd, 1990, p. 86). While not

the conduct of missionaries and their preaching, so that they could use these flaws as weapons to resist their influence (Brown, quoted in Leroy, 1927, p. 67).

¹⁶ For instance, one wishes that modern consumers were as savvy as this skeptical Chinese man from the 3rd century BCE: “Once there was a man of Ch`u selling shields and halberds. In praising his shields he said, “My shields are so solid that nothing can penetrate them.” Again, in praising his halberds, he said, “My halberds are so sharp that they can penetrate anything.” In response to his words somebody asked, “How about using your halberds to pierce through your shields?” To this the man could not give any reply. Indeed, impenetrable shields and absolutely penetrative halberds cannot stand together at the same time.” (Han Fei Tzu 36.4.33, quoted in Harbsmeier, 1998, p. 215) (in fact, this very argument is used as an analogy to make a related point, another display of Han Fei Tzu’s remarkable argumentative skills).

denying that Easterners can use this principle, Peng and Nisbett still state that Chinese thought tends to obey a “principle of contradiction” according to which “reality is not precise or cut-and-dried but is full of contradictions” (Peng & Nisbett, 1999, p. 743). They conclude their work by saying that “there are two very different cognitive traditions in East and West regarding the treatment of seeming contradictions. The differences we have found, it should be noted, are actual qualitative ones” (Peng & Nisbett, 1999, p. 750). It is these differences that I will now examine (see S. F. Chan, 2000; Ho, 2000; Huss, 2004; Lee, 2000 for other critiques of these experiments and their interpretation).

A tendency to overlook contradictions could be apparent in the resolution of social conflicts¹⁷. Whereas the analytic Americans should focus on only one side of the conflict, holistic Chinese should be able to see the value of both points of view and seek a middle way. Peng and Nisbett presented two conflict situations to their participants, a mother-daughter conflict and a school-fun conflict, and ask them what kind of conflict resolution they would favor. Having coded the answers that tried to take both sides into account as dialectical, they observed an important difference: more than twice as many Chinese than American participants gave such dialectal answers. It is possible, however, to explain this finding through potential cultural differences that are not directly related to contradiction. Given the content of the problems used it is not too farfetched to imagine that Chinese participants were more inclined to consider not only the daughter’s point of view, but also the mother’s (because, for instance, of their more collectivistic culture and the respect of family values it entails). Likewise, seeing the necessity of working hard even if it implies missing some fun might be easier for Chinese participants given the stress put on school performance. Moreover, any difference in the perceived relevance of the conflict situation can bring about similar results inside a given culture (Frantz & Seburn, 2003). And when Eastern (Japanese) participants have a direct stake in the contradiction (someone is stating a view point opposite their own), they behave exactly as Westerners (French) participants, favoring their own position (Mercier, Van der Henst,

¹⁷ The first two experiments dealt with preferences for dialectical or non-dialectical proverbs. The difference that was observed in Peng & Nisbett (1999), however, seems to be the result of a confound, and has proven hard to replicate (Friedman, Chen, & Vaid, 2006).

Yama, Kawasaki, & Adachi, submitted; Van der Henst, Mercier, Yama, Kawasaki, & Adachi, 2007). So generalizing from these two, arguably very tendentious, examples does not seem to be warranted, especially as “cultural group differences in conflict style have not always replicated across studies; high within-group variance often swamps between-group variance” (Fu et al., 2007, p.191).

A similar criticism can apply to another experiment in which participants had to evaluate the persuasiveness of four arguments, two for the existence of God and two regarding the Aristotelian assumptions that objects of different weights will fall to the ground at different speeds. One of each argument pair was ‘logical’ whereas the other was ‘dialectical’. It would be easy to quibble with these characterizations (how logical can a proof of the existence of God be?¹⁸), but the main problem is again one of generalization. It takes a huge inductive leap to conclude from these two topics, full of different cultural undertones, to general tendencies to deal with contradiction.

In their last experiment Peng and Nisbett asked their participants to rate contradictory statements either in pair or in isolation. Here is an example of the statements they used: “A social psychologist studied young adults and asserted that those who feel close to their families have more satisfying social relationships”; which was paired with: “A developmental psychologist studied adolescent children and asserted that those children who were less dependent on their parents and had weaker family ties were generally more mature”. The American participants tended to judge the stronger of the two statements, as judged in isolation, as being stronger when the two were presented together, increasing the difference between the ratings of the two statements. The Chinese participants behaved in the opposite manner, boosting the ratings of the weaker statement, so that the ratings of the two statements did not differ when they were presented together. From these results, Peng and Nisbett conclude that, when presented with a blatant contradiction, the

¹⁸ For instance Huss (2004) points out that the argument for the existence of God that is favored by Westerners in this experiment, because of its apparently logical form, contains a blatant contradiction between premises and conclusion. This contradiction is nonetheless ignored by the Westerners who are supposed to stake so much on the principle of non-contradiction.

Americans participants pinched resolutely with one side whereas the Chinese participants choose to remove all difference by rating the two sides equally well.

It is possible however to offer another interpretation for these findings. A large amount of evidence points towards the existence of two ways to evaluate arguments: a peripheral route that relies on simple cues and a central route that involves an evaluation of the strength of the arguments (Chen & Chaiken, 1999; Petty & Wegener, 1999). When faced with the contradictory arguments, participants can engage in either of the two evaluative routes (there is much less to evaluate when the arguments are presented in isolation). Those participants who use the peripheral route are going to rely on cues such as the authority of the sources. If, then, they judge their authority to be similar (a developmental vs. a social psychologist for instance), they will award the same ratings to both statements. On the other hand, those who use the central route will examine the arguments more deeply, which may very well lead them to realize that one has more intrinsic value than the other. It is well established that the main factor pushing towards either one of these routes is the personal relevance of the arguments being evaluated (Petty & Wegener, 1998). It is therefore possible to account for Peng and Nisbett's finding by another, less relevant cultural difference: these very results should be obtained if the topics chosen were less relevant for the Chinese than for the American participants. Some preliminary empirical evidence favoring this interpretation has been gathered. By varying the degree of interest for the topics, it was possible to have Western participants behave in a 'Chinese' manner (rating both statements equally only when presented together) and Chinese participants behave in an 'Western' manner (increasing the ratings of the stronger of the two statements presented together Van der Henst, Mercier, Zhang, Qu, & Lu, In prep).

Finally, it is worth mentioning another piece of data that is cited in support of the idea that the Chinese deal differently with contradiction. According to Peng and Nisbett, "there is very little emphasis on constructing counter-arguments in the Asian tradition ... Instead, the emphasis is on finding "the middle way"". Interestingly, the experiments they cite as supporting this claims actually

support a rather different conclusion, much more in line with the view defended here. Yates and his collaborators have observed that Chinese participants tend to be more overconfident than their American counterparts (Yates, Lee, & Bush, 1997). Such overconfidence stems at least in part from the common tendency, once an answer as been reached, to only find supporting evidence, thereby artificially boosting confidence (Hoch, 1985; Koriat, Lichtenstein, & Fischhoff, 1980). According to Yates et al., the Chinese are even more prone to this bias than Westerners¹⁹. Far from making these Chinese participants find a 'middle way' however, this will only make them swerve towards their initial opinion even more, when counter-arguments could have led them to a more balanced evaluation. Moreover, in other circumstances Easterners (Japanese students) have been found to be more at ease criticizing other people's positions than Americans (Hazen, 1984).

Even though the ability to detect and react appropriately to contradiction may not be a part of reasoning itself, it still plays an essential role in any argumentative activity. Argumentation is typically triggered by a contradiction, and many arguments play on the internal contradiction between the interlocutor's statements. It was therefore important to show that, if there is any difference in the way Easterners and Westerners deal with contradiction, it is rather superficial and, more importantly, that Easterners are well able to make a sound argumentative use of contradictions.

4.2 Holistic and analytic thinking

While different areas of social and cognitive psychology were converging on a distinction between two systems of thoughts, cross-cultural psychologists were elaborating the related division between holistic and analytic thinking that has been mentioned earlier in this article. If cross-cultural

¹⁹ As a matter of fact, Westerners are already heavily biased and find it very difficult to generate counter-arguments against their own claims (see Kuhn, 1991 for instance), despite the fact that "A good part of Western education in fact consists of teaching children how to generate arguments and counter-arguments concerning a given position" (Peng & Nisbett, 1999, p. 750, see Kim, 2003 and Dong et al., 2008 for a more evenhanded position regarding Confucian inspired education).

psychologists recognize that all people are “likely to possess both of these reasoning systems” (Norenzayan, Nisbett, Smith, & Kim, 2000, p. 654), they still claim that people reason in “qualitatively different ways” (Nisbett et al., 2001, p. 305). Specifically, they assert that Easterners tend to scorn analytic thinking and rely much more heavily on intuitive thinking. For the theory defended here however, reasoning (system 2, analytic reasoning), is not a mere style of thinking but an essential ingredient of human psychology. For a culture to renounce extensive use of reasoning would be like deciding to talk only very rarely: something not impossible maybe, but very unlikely to be sustained for a large population over an extended period of time. I am going to suggest that the use of reasoning is much more influenced by the immediate context than by deep seated differences between Easterners and Westerners. This suggestion is in line both with a wealth of recent work in cross-cultural psychology studying “culture as situated cognition” (Oyserman & Lee, 2007), as well with Lloyd’s idea, based on historical analyses, of the primacy of context instead of mentalities (Lloyd, 1990).

Ara Norenzayan has conducted a series of experiments that aim at showing that Easterners favor intuitive thinking whereas Americans favor analytic thinking (Norenzayan et al., 2000). While less subject to the charge of generalizing from a few examples, it is still possible to point out a few limitations in the conclusions that can be drawn from this data. First, Norenzayan is the first to acknowledge that there are no “differences in logical ability” between his participants (Norenzayan et al., 2000, p. 678). That is, when the experiment does not pit intuitions against reasoning, Easterners and American participants perform equally well (or equally poorly). It is also interesting to notice that some of the differences obtained (Study 2) are more easily interpreted as an over-use of rules by the Americans than an over-use of intuition by Easterners²⁰. And one can easily imagine that the content of the problems used, rather than any general difference in cognitive style, may have

²⁰ Given the task at hand, the use of rules was likely to be much slower a more effortful than that of intuition, for no obvious benefits.

played a role at least in one experiment (Study 4, in which a difference was obtained only for a subtype of arguments, see also Unsworth & Medin, 2005 for a critique of this experiment).

Despite these potential shortcomings, several results point to a significant difference in the use of intuition and reasoning by Easterners and Americans. One of these results, however, is very telling as to the relative superficiality of this difference. In the third study the manipulation was made salient only in one half of the experiment. When this was the case, the Korean participants behave in the same manner as the American participants, showing that a little nudge can undo any difference otherwise observable. Other researchers stumbled upon another telling result while carrying out similar experiments. The problem they used could be solved either inductively (a process closer to intuitions) or deductively (requiring reasoning) (Louis Lee & Johnson-Laird, 2006). First they observed absolutely no difference among their Chinese and American participants in the preference for one type of solution. But they also observed that both groups of participants were much more likely to suggest a deductive solution when they were answering the problem right after they have had to solve unrelated deductive problems. Other results have shown that the relative use being made of intuitions and reasoning can be easily influenced, within a given population, by varying the processing goals or through priming techniques (Ferreira, Garcia-Marques, Sherman, & Sherman, 2006).

From these results, it seems quite clear that Easterners are as able as Westerners of 'analytic' thought and that the use of intuition or reasoning can easily be influenced by the immediate context in any population, a conclusion very much in line with the work mentioned earlier about illiterate populations. This should come as no surprise given the strong effects simple primes can have on 'cultural' cognitive differences, from perception to high level cognition (see Oyserman & Lee, 2008 for review). It is important to stress that parts of 'analytic' cognition may in fact be carried out by intuitive processes and that a fair share of what is usually called 'holistic' cognition may stem from superficial variation in a similar reasoning system (see Buchtel & Norenzayan, 2009 for a reflection on

the differences between the intuition - reasoning and holistic - analytic distinction). Some differences between 'holistic' and 'analytic' thinking have more to do with a preferred style of argument than with reasoning ability *per se*—a point that will be elaborated on presently.

5 Conclusion

The main claim of this paper is that people everywhere, irrespective of their language or culture, can and do argue, even if this requires abstract reasoning. This may seem rather obvious, but it is still a point worth making in light of the strong claims that have been made about either illiterate populations or East Asian cultures. In particular, what can we conclude from the research program of Nisbett and collaborators regarding skills related to argumentation? First of all, the historical and sociological claims on which they base their theories represent of rather rough grained perception of the differences between Easterner and Westerner culture; one that recent scholarship has rendered somewhat dated. It is possible, however, to draw from this literature a view of finer grained differences: differences in the way arguments are used rather than in the use of argumentation *per se*. In any case, these criticisms certainly do not warrant a wholesale rejection of the research program and its many empirical results, which present an impressive and coherent whole with some very robust results. Instead, it is more interesting to point out the dangers of. It is also possible to attempt a reinterpretation, which could possibly be done along the lines that will be laid out presently.

One of the predictions of the argumentative theory is that when reasoning is used in decision-making, it should push people towards decisions that are easy to justify, but not necessarily better. This fits well within the framework of reason based choice that has provided a similar account of many decision-making phenomena (see Shafir, Simonson, & Tversky, 1993). Most relevant here is an experiment that varied not only the use of reasoning, but also the cultural origin of the participants (Americans and East Asians) (Briley, Morris, & Simonson, 2000). Participants had to

choose one item among a set of three, one of which was a compromise option while the other two were more 'extreme' (much stronger on an attribute but much weaker on another). In a control condition, no difference was observed between American participants and participants from Hong Kong. However, when the participants had to provide reasons for their choices—when they had to reason more—a difference appeared: Americans started to choose the extreme more often while participants from Hong Kong tended to favor the compromise option. These new choices are more in line with the hypothesized cultural values of the two groups, and indeed the answers were mediated by the content of the reasons given. This raises an interesting quandary because in this case more reasoning led the East Asian participants towards an answer that might otherwise have been qualified of being more 'holistic' (taking all the attributes into account). On the other hand, it is exactly what is to be expected if reasoning drives people towards easy to justify answers: what makes for a good justification will depend on the context, including the cultural context.

Besides these differences in the content of the justifications that reasoning will find more appropriate, it is also possible to think that culture could influence the way reasoning looks for arguments. When engaged in a debate, there are two broad strategies that can be followed: bolstering one's claims, or attacking those of the interlocutor. Lloyd claims that the ancient Greek relied more on the former while the Chinese preferred the latter: "The Chinese too, of course, prized arguments that defeated those of their opponents, but they did so mainly by showing the weakness of their opponents' positions directly, not by claiming that their own were unassailable thanks to their logical structure" (Lloyd, 2006 p. 167). Such differences may emerge because of the way different types of arguments are perceived. Maybe dwelling too much on one's own arguments would have been perceived as arrogant in ancient China? It is certainly possible to learn what kind of arguments will be better received in a given environment and to adjust the way we look for them accordingly. It is therefore likely that cultural differences will emerge in this respect as well.

The argumentative theory sees reasoning as a fundamentally social ability. It is but one of the many cognitive mechanisms that we use to make the best of our social environment. In this framework, reasoning should be partly substitutable with other mechanisms of social influence. For instance, rather than trying to find elaborate arguments with a strong internal logic, one can instead focus on the mental states of the interlocutor, trying to figure out what kind of argument will be more effective. The skills required to do that will be closer to mentalization (theory of mind) than to reasoning. So it is possible to expect cultural variation not only in the way reasoning itself is used, but also in the trade-offs between different persuasion skills. Thus, while there may have been no Chinese Cicero or Quintilian, “In imperial Rome ... there is nothing to equal the subtlety of the psychological analysis in Hanfeizi” (Lloyd, 2007, p. 10).

The Eastern and the Western traditions differ not only in the way they use reasoning, but also in the way they perceive it (a difference that persists to this day Buchtel & Norenzayan, 2008). I surmise that the Greek influence has (also) had an adverse effect on our understanding of reasoning. By seeing reasoning and logic as tools primarily designed for individual epistemic improvement, the Greeks may have bequeathed upon their intellectual heirs a rather flawed conception²¹. Maybe the more pragmatic Chinese were right, for whom arguments “are in general designed not to *prove* ... but to *convince*” (Harbsmeier, 1998, p. 265).

²¹ Ironically enough, Lloyd suggests that this very notion was born out of argumentative pressures (Lloyd, 1990, pp. 23ff, 86)

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