ISSA Proceedings 2014 – Consideration On The Notion Of Reasoning

Abstract: I started my discussion from Ralph H. Johnson's view, and examined the phenomenon that theorists have used the notion of reasoning in different way and tried to explain why they use it in a confusing manner. I compared the notion of reasoning with the notions of argument and argumentation. I also pointed out some misunderstood concepts related to reasoning, such as soundness, completeness and validity. And hence proposed a new definition of reasoning.

Keywords: Argument, Argumentation, Reasoning

1. *Introduction*

It is known to us that informal logic has been developed over thirty years since the late 1970s last century. During decades, discussions that mainly concerns on the issues on interpretation, construction and evaluation of argumentation have led to remarkable accomplishment. Although they first started from the demand of pedagogical reform that launched by students and teachers in universities of Canada by rejecting the way symbolic logic treated to our daily arguments, these research were carried out from distinct perspectives, and rapidly developed in north America, Europe and now Asia. Gradually researchers gained accumulated agreement that the strict and artificial symbolic language only can never be enough for us to construct and evaluate arguments in natural discourse.

And argumentation theory has been benefited from examining the way we look at logic. Under this naturalizing turn of logic, reasoning has also been studied from a different manner than what traditional symbolic logic has done. Not only did researchers start to pay attention to those who deduction and probability were hard to resolve, but among them, they incorporate a number of various reasoning types to reasonable use in different contexts.

However, although the discussion of reasoning has all the way accompany discussion on argumentation theory (a broad sense including informal logic so), it is still far away from what we should achieve. As Ralph Johnson has pointed out, if we type "the theory of reasoning" and try to look up through *The Encyclopedia of*

Philosophy, then we will find no entry, nor standard indices of *The Philosopher's Index*, whereas the other related concepts are given intensive discussion, say, "rationality" (Johnson, 2000). As we have seen, although different reasoning under different contexts has been studied under the title of informal reasoning, there is still little research on the notion reasoning itself from a perspective of philosophy. However, understanding reasoning means not only how much we know about itself, but also vital in understanding the other related concepts. As Johnson also pointed out the First Form of Network problem, it is significant for us to understand the concept and the interrelationship of critical thinking, problem solving, metacognition, argumentation, informal logic and reasoning (Johnson, 2000). And only in understanding these definition and interrelationship of them all can we situate what we have known in a comprehensive and confusion-avoiding location, which leads to the Second Form of Network Problem "How does reasoning relate to argumentation? How is reasoning related to rationality? to intelligence? to knowledge? to thinking? to argument?"**[i]**And to constitute a "theory of reasoning", Johnson made a list for us to answer:

1. What is reasoning? Is reasoning either identical to, essentially the same as, or else reducible to, inference, implication, and entailment… How does reasoning differ from thinking?
2. What is the relationship between reasoning and rationality? Are they the same concept under different guises? And what about reasoning and intelligence? reasoning and knowledge?
3. Is there a discernible pattern in the historical development of the various exemplifications of reasoning? And what can we learn from various historical theories of reasoning?
4. Are there universal principles of reasoning? Or are substantive principles of reasoning always field dependent?
5. What is an appropriate conceptual scheme (or framework) for the theory of reasoning? How can reasoning be most plainly categorized?
6. What are the criteria of adequacy that a theory of reasoning must satisfy?**[ii]**

Beside Johnson, Finocchiaro also had clarified what he called the theory of reasoning "By theory of reasoning I mean the attempt to formulate, to test, to clarify, and to systematize concepts and principles for the interpretation, the evaluation and the sound practice of reasoning. I claim that the theory of reasoning so defined is a legitimate philosophical enterprise which is both viable

and important. ” (1984, p. 3). To sum up, if there is anything we call “theory of reasoning”, then the first issue for us to approach is to answer the question “what is the notion of reasoning?”

2. *The popular definitions of reasoning*

2.1 *Operational view*

In realm of formal logic, reasoning and argument have been defined as a sequence of formulas, the very last of which is conclusion and the remainders are premises. Each formula comes either from the set of axioms or follows from the previous members by application of specific reasoning rules. This definition is widely applied in various branches of symbolic logic, and even has been regarded as a standard definition in logic to introduce into other disciplines. There are also, although privately, some logicians even believe that the application of reasoning rules themselves is already reasoning, for instance, *modus ponens*. However, more commonly, logicians treat reasoning and argument as the same thing; and they have no interest in differentiating these two notions. These logicians hold the view that it makes no sense in distinguishing reasoning and argument as they have little difference in the dealing way in symbolic language system, in that all the corresponding natural language have been abstracted into formulas composed of mere variables and connectives that represent specific meaning.

According to this, reasoning as well as argument can be classified into different categories, by criteria that how strong the link between premises and the conclusion. Hence, we have deduction and induction. By deduction, it refers to those reasoning whose conclusion follows necessarily from premises that have been known as true; while by induction, it refers to reasoning that the conclusion is probably true, instead of being necessarily true, if their premises are true.

Looking at this point of view, we can see that scholars agree on it regard reasoning as purely abstract operation (or calculation). It is by no means that I am denying that reasoning has close relationship with abstract calculation, however, in daily life, there is not a single kind of real reasoning can be carried out regardless of real subject and real environment that subject has been situated. For instance, we can of course complete an abstract operation of mathematical proof by systematic calculation. However, we must complete it out of some real reasons. We may do it to complete our homework, or to satisfy our curiosity, or sometimes just for time-killing. But any reason is out of human practical purpose,

which means real reasoning that conducted by human subject can never be separated from practical appeals. This is to say, by real reasoning, it by no means equals to abstract mathematical operation, rather, it is a kind of practical activity that also closely related to pragmatic environment and specific context. This also explained that why results from psychological experiments went so against logic.**[iii]** Although formal logicians regard reasoning as pure abstract operation through their normative concern and characteristic of discipline, if we treat the operation view as the only legitimate manner to study reasoning, we simply overlooked the diversity and flexibility of human reasoning in real life. And real reasoning has so much for us to explore, it deserves a new and complete consideration of its notion.

2.2 *Inferential view*

Unlike formal logicians who concentrate on transformation of logical structure between statement forms and the truth-value calculation of formulas in symbolic system, informal logicians paid more attention on considering the content and context of reasoning from a pragmatic point of view. One popular point of view goes that reasoning is inference, or a sequence of inference. Take these definitions for example,

Dagobert D. Runes:

"*Reasoning is the process of inference; it is the process of passing from certain propositions already known or assumed to be true, to another truth distinct from them but following from them; it is a discourse or argument which infers one proposition from another, or from a group of others having some common elements between them.*"**[iv]**

Douglas Walton:

"*Reasoning is the making or granting of assumptions called premises and the process of moving toward conclusions (end points) from these assumptions by means of warrants.*"**[v]**

Stephen Toulmin:

"*The term reasoning will be used, more narrowly, for the central activity of presenting the reasons in support of a claim, so as to show how those reasons succeed in giving strength to the claim.*"**[vi]**

These definitions seem that they emphasized the centre status of the roll that

inference played in process of reasoning, and supporting structure played in inference. Beside the scholars I mentioned above, Jaakko Hintikka, C.L. Hamblin are also on the list, which reflects how popular this point of view is. However, it seems to me that, the definition that defines reasoning to inference or superimposition of inference seems too narrow, which reminds us to be vigilant. According to Johnson, inference is "the transition of the mind from one proposition to another in accordance with some principle; at its best, guided by the theory of probability."**[vii]** If we admit reasoning equals to inference, then we simply overlooked the fact that reasoning can be very flexible. Reasoning can not only be proceeded forward to the product of our mind, but also backward to the state of mind that can complete our problem space. For instance, problem solving is very typical. In many cases we search the arithmetic from not only beginning stage to end stage, but also do it inversely to search problem space. And sometimes it even goes circular, like A ⊨ A. And second, reasoning can repeat, stop and restart whenever the subject wants to, for
instance, mathematical calculation. If we calculate the value of n in equation "n = m+1", we can start from wherever "m = 1, n = 2; m = 2, n = 3; m = 3, n = 4……" or stop whenever we like to stop in this sequence. And if it is in need, we can surely repeat the process from necessary part. And third, reasoning can conduct not only in language but also on image, and sometimes reasoning on image can speed up our reaction. Fourth, reasoning can correct itself, and correctional reasoning takes place frequently among our everyday life.

So the question is, can inference behave the same all? Or, even if it can, do inference and reasoning follow the same process or proceed in same mental mechanism? The answer to these questions would be very tricky and it is better for us to combine the related discipline's results, say, cognitive psychology. However, before that, we have to be careful with this inferential view.

3. *Conceptual confusion*

Till now, it seems that the notion of reasoning has been confused with a bunch of related concepts. Among those concepts I see argument is a highly appearing term. If we look at the views we have discussed above, it would not be surprise for us to see the confusion between the notion of argument and reasoning. In fact, not only in formal logic, but also in informal logic it has also been full of this conceptual confusion. For instance Toulmin (1984), after defined "reasoning" as I mentioned above, he immediately offered his definition of "argument", which says

“An argument, in the sense of a train of reasoning, is the sequence of interlinked claims and reasons that, between them, establish the content and force of the position for which a particular speaker is arguing.” From here we can observe, for Toulmin, the chain of inference makes reasoning, and the chain of reasoning makes argument. This point of view is endorsed by countless scholars which spreaded widely within informal logic. It seems make sense in the first place. However, if inference cannot be as equal as the only component of reasoning as we had expected, then how come the longer length and larger size of reasoning makes argument? If the notion of reasoning and the notion of argument only differ in its complexity, then what is the distinction between these two in nature?

The problem lies whenever we mentioned the notion of reasoning, we seldom really separate it from the notion of argument. There are countless logic textbooks starting with introduction to argument and then immediately tell students that reasoning can be classified as deduction and induction… as if “argument” and “reasoning” are the same words which can be used in turn. No matter in formal logic and informal logic, the notion of reasoning has all the way been bundled with the notion of argument. However, even we often try to convince other people by displaying our line of reasoning, it by no means that they are the same thing essentially in equal. One can surely experience that we always reason before we argue. And even Newton had indeed been hit by an apple which inspired him the law of gravity, he would never had composed his paper by the way he was inspired. Instead, he would certainly choose the normative treatment according to his own discipline. Why? Because reasoning is different from arguing.

Besides, if we trace the earlier root of history all the way back to this confusion, we would find that even in Aristotle’s works, he also used these two terms as interchangeable, although he did distinguish reasoning and argument. And hence Aristotle influenced all the way that we look at reasoning and argument.

4. *Clarification*

In order to clarify this confusion, we still have to return to formal logic, where validity has been complained quite a lot since last century. If we look at formal logic, no matter proposition logic, predicate logic, or non-monotonic logic, although formal logicians had studied logic by making use of symbolic mathematical treatment, their research object are human reasoning with distinctive characteristics, instead of single argument in everyday life. Precisely,

what they study is the abstract form of reasoning; and symbolic systems are used to simulate the specific reasoning phenomenon with different characteristics. Theoretically, anyone can construct a symbolic system without considering its interpretation meaning. If all the propositions of this system are valid under the semantic interpretation that the system tried to describe and simulate, then it means this system successfully re-displayed this kind of reasoning phenomenon that the system tried to simulate. And in turn, if all the semantic interpretation can find its corresponding proposition within formal system, it means that the system constructed can completely show the reasoning phenomenon that the system intends to simulate. In this sense, formal logic used strict mathematical tools to describe, simulate and predict the different characteristics of reasoning phenomenon. And validity should be understood as the micro nature of both syntactic system and semantic model. It functioned as a kind of media which connects and guarantees the macro nature of symbolic system constructed can fit its semantic interpretation very well. In other words, what formal logic study is reasoning, instead of argument as informal logicians have focused on. Therefore, the term "validity", "soundness" and "completeness" should be understood from the macro nature of logic system and its corresponding semantic interpretation that the formal system tries to capture. However, those criticisms from informal logicians had mixed the difference between reasoning form that formal logicians focused on and the real arguments that we come across in daily life. For instance, if we take $A \vDash A$ as an argument, then it surely is not a successful one, however, if we take it as a piece of self-evident reasoning, then no one can deny it is no wrong.

As Johnson had pointed out, if we want to clarify the notion of reasoning, then it is better for us to understand it in a network of its related concepts. To understand the notion of reasoning, one has to understand its relationship with argument, as well as the relationship with argumentation. To free the notion of reasoning from the bundling of argument, I think there are some key points that we have to consider:

– Reasoning is a mental process. Although logicians may feel uneasy about this point as it seems drifted away from encompass of logic, we have to face it. In saying so, one must realize that the notion of reasoning has become into a broad sense. The truth is, the notion of reasoning was too narrow from what I have discussed above. And this narrowness seriously hindered our understanding of

reasoning and placed a lot of terms that caused confusion in degree. For instance, under the previous narrow sense of reasoning, problem solving, critical thinking and argumentation would seem close but still difficult to explain each other in a proper relationship. However, under this broad sense of reasoning, these concepts would be covered as application of reasoning practice that conducted through the product of reasoning, which will be discussed later. Only in admitting this, can we make distinction between reasoning and argument, in that, argument, no matter oral or written, is a kind of product of reasoning process. While argumentation is essentially a kind of social activity that is the application of the product of reasoning.

– Reasoning has practical purpose which leads reasoning to be situated in diverse contexts. As we have discussed before, in real life, there is no such reasoning can be conducted without any practical purpose, even conducting mathematical proof. This is to say, to study reasoning under different titles requires exploration that differs from formal logic which focused on the nature of symbolic system and its corresponding interpretation; rather, we should take more things into account as the research for real reasoning process can never be satisfied with the only mathematical treatment. And real reasoning is real because it conducted in a real environment that lots of factors have to be taken into account. This is to say, as Finocchiaro had proposed, if there is anything can be called the theory of reasoning, it has to incorporate "the attempt to formulate, to test, to clarify, and to systematize concepts and principles for the interpretation, the evaluation and the sound practice of reasoning."**[viii]**

– Reasoning seeks to obtain products of mind which can be belief, argument, plan, solution, and image, etc. This explained why people prefer to persuade others by displaying their reasoning line, as it is an effective convincing method by simply revealing how they arrive at their mental product. This is to say, reasoning differs from argument in persuasion. Argument aims to convince other people that might disagree with the arguer, but reasoning has no such function, in that reasoning is only proceeded to arrive something. If anything is in charge of being convincing, that's argument. So, construct argument means selecting useful things among all sorts of reasoning products. And it can explain why the theory of argument always related to dialectics and pragmatics, for they are all related to convincing.

– Reasoning has operation (or calculation) level. Cognitive psychology has proved that human can conduct mental operation by not only language but also image.

This also explains why for many years formal logic has been taken as the born legitimate discipline aims to study reasoning and why visual image could also influence our state and product of mind. Although real reasoning takes place everywhere in our life, we surely have the ability to calculate or to operate on abstract state of mind while conducting reasoning. And by operation and calculation, we obtain our thinking product. However, the quality of this ability differs from context to practical environment which reasoning is being conducted.

What is reasoning? After so much discussion, it is time for us to consider the notion of reasoning from a distinctive perspective. In saying reasoning in the realm of informal logic, it is a kind of mental process which proceeds through mental operation to arrive at thinking products under practical environment. This seems like a descriptive definition; however, it helps us to understand reasoning under a real and broad environment of our daily life. And in saying theory of reasoning, it aims to capture and explain the conceptual natures and principles of reasoning that is conducted by real subject in pragmatic environment; it aims to formulate, interpret and evaluate the practice of reasoning.

5. *Conclusion*

Although for all the time, the notion of reasoning has been used in a very narrow sense while the notion of argument to the contrary very broad, we finally have to clear up the conceptual confusion that caused from this narrowness. To better understand reasoning, we should look at formal logic from a fair angle and check its definition by contrast of argument and argumentation.

Finally I discussed the fundamental natures that reasoning has, and explained the new definition of reasoning and the main contents that a theory of reasoning should cover.

To sum up, the theory of reasoning comes from also the philosophical demand and the practical needs of our understanding of real reasoning that takes place in everyday life. In this point, it has no conflict with formal logic treatment as they function differently in study of reasoning. Formal logic is more interested in abstracting the mathematical rules of human reasoning phenomenon; and the theory of reasoning is interested in understanding real reasoning with its relationship of the related concepts and practical application in real life.

To complete informal logic, the theory of reasoning plays significant role in the

development of the theory of argument and argumentation, only in clarity of the fundamental issues of reasoning that the related concepts can gain greater progress in understanding themselves.

Besides, the theory of reasoning should be friendly with its related disciplines as cognitive science needs a cooperative work. And in doing this, it can explain the conflict conclusions that are from research of distinctive disciplines. In this sense, the theory of reasoning can function as bridge for us to coordinate with each related disciplines. In turn, the development of other subjects can also help us understand reasoning.

NOTES

i. Johnson, & H. Manifest Rationality: A Pragmatic Theory of Argument, Mahwah, NJ: Lawrence Erlbaum Associates, (2000), 23.

ii. ibid. 97.

iii. Dunbar, G. L.Traces of reasoning with pragmatic schemas, Thinking & Reasoning (2000), 6:2, 173-181.

iv. Dagobert D. Runes, Dictionary of Philosophy, Totowa, NJ: Rowman & Allanheld, (1984). 281.

v. Douglas. Walton, WHAT IS REASONING? WHAT IS AN ARGUMENT? Journal of Philosophy, Vol. 87, (1990), 403.

vi. Stephen Toulmin, Richard Rieke, Allan Janik, An introduction to reasoning, 2nd edition, New York, Macmillan Publishing Company (1984).14.

vii. Johnson, & H. Manifest Rationality: A Pragmatic Theory of Argument, Mahwah, NJ: Lawrence Erlbaum Associates, (2000), 94.

viii. Maurice A. Finocchiaro Informal Logic and the Theory of Reasoning, Informal Logic, Vol.6, (1984), 4.

References

Aristotle (2010). *The works of Aristotle.* Translated into English under the editorship of W.D. Ross. Oxford: Nabu Press.

Dunbar, G. L (2000). Traces of reasoning with pragmatic schemas, *Thinking & Reasoning*, 6:2, 173-181.

Eemeren, F. H. van & Grootendorst, R. (2004). *A Systematic Theory of Argumentation: The pragma-dialectical approach*, Cambridge: Cambridge University Press.

Finocchiaro, M. A. (1984). Informal Logic and the Theory of Reasoning, *Informal Logic*, 6, 3-7.

Hamilton, A. G. (1988). *Logic for Mathematicians,* Cambridge: Cambridge University Press, 2nd.
Johnson, & H. (2000). *Manifest Rationality: A Pragmatic Theory of Argument,* Mahwah, NJ: Lawrence Erlbaum Associates.
Runes, D.D. (1984). *Dictionary of Philosophy*, Totowa, NJ: Rowman & Allanheld.
Toulmin, S. E. & Rieke, R & Janik, A (1984). *An introduction to reasoning*, 2nd edition, New York: Macmillan Publishing Company.
Walton, D. (1990). What is reasoning? What is an argument? *Journal of Philosophy,* 87 , 399-419

ISSA Proceedings 2014 ~ Chinese Understanding Of Interpersonal Arguing: A Cross-Cultural Analysis

Abstract: China has a longstanding tradition of stressing the values of harmony and coherence, and Chinese society has always been alleged to be a group where conflict avoidance is viewed more positively than direct confrontation and argumentation. In order to evaluate the validity of this claim, this paper sketches Chinese people's feelings and understandings of interpersonal arguing by reporting results of a data collection in China, using measures of argumentativeness, verbal aggressiveness, argument frames, and personalization of conflict. Chinese and U.S. data differed in complex ways, but did not show Chinese respondents to be more avoidant. The Chinese correlations among variables were a reasonable match to expectations based on Western argumentation theories. The paper offers evidence that Chinese respondents had a more sophisticated understanding of interpersonal arguing than their U.S. counterparts, and were more sensitive to the constructive possibilities of face-to-face disagreement.

Keywords: argument predispositions, China, confrontation, interpersonal arguing

1. *Introduction: Chinese orientations to interpersonal arguing*

Most of the existing literature on argumentation and communication studies suggests that the Chinese culture has long stressed the values of harmony, coherence, and holism, implying that Chinese people would prefer non-confrontational, non-argumentative, and conflict avoidance approaches over direct argumentation and confrontation in their social lives (Jensen, 1987, Leung, 1988; 1997; Lin, Zhao, & Zhao, 2010; Oetzel & Ting-Toomey, 2003; Oetzel et al, 2001; Triandis, 1995). Accordingly, Chinese society has always been regarded as a group where conflict avoidance is viewed more positively than direct confrontation and argumentation, and Chinese people's understanding of, and attitudes towards, interpersonal arguing have been supposed to differ significantly from those of Western people, whose culture has appreciated, from its very beginning, the importance of argumentative practices.

Moreover, it has also been argued by many scholars that, within Chinese social-cultural tradition, there is indeed a lack of argumentation and debate, a deprecation of speeches, and even a disinterest in logic (Becker, 1986; Kennedy, 1980). This longstanding tradition has not only contributed to a deficiency of argumentation studies in ancient China, but has also shaped in an important way the Chinese people's orientations to interpersonal arguing behaviors in modern times (Oliver, 1971; Kincaid, 1987). In the last decades, a considerable amount of work has been done to argue against the absence of argumentation and its study in ancient China (Garrett, 1993; Jensen, 1992; Lu & Frank 1993), but there seem to be few studies that examine what the modern Chinese people's orientations to interpersonal arguing really are, and whether they do differ from those of Westerners in a significant way. The purpose of this paper is to address these last two questions with empirical findings. In what follows, we first explain the instruments we have used to sketch understanding of interpersonal arguing, then we present the results of our study and make comparisons between the Chinese and the U.S. data, and finally we end with some discussion concerning Chinese orientations to confrontation and argumentation.

2. *Sketching Chinese people's understanding of interpersonal arguing*

There are quite a few possible approaches to providing an empirical summary of Chinese people's views on arguing, and in fact we have already addressed this topic in a different way (Xie, Shi, Evans & Hample, 2013). However, this paper is also part of a systematic cross-cultural project in which we are trying to compare

different nations and cultures on the same instruments. The project's intention is to establish some general findings and comparisons that can be explored further with other methods and aims. To that end, we have decided to make use of several instruments that we believe have clear implications for most arguing behaviors and orientations. These instruments have all been developed in the United States, which immediately raises questions about their relevance to other cultures. However, even the finding that these concepts lack importance elsewhere in the world would be substantially informative.

2.1 *Argumentativeness and verbal aggressiveness*

The first instruments bear on people's motivations and orientations to interpersonal arguing. These are argumentativeness (Infante & Rancer, 1982) and verbal aggressiveness (Infante & Wigley, 1986). These both represent approach/avoid motivations that are relevant to arguing, but they differ in their motivational targets. Argumentativeness is the predisposition to engage or attack the other person's evidence, reasoning, or position. Verbal aggressiveness is the predisposition to attack the other person's character, background, or identity. Being argumentative is constructive and has a host of positive consequences, but being verbally aggressive is destructive and is corrosive to relationships (Rancer & Avtgis, 2006).

Some prior research has applied these concepts in China (or, in several cases, Taiwan). Only a little of this work bears very directly on the present project, but it may be worthwhile to summarize it all in one place. Lin, Rancer, and Kong (2007), using Chinese-language materials, found that Chinese college students' argumentativeness scores were associated with communication practices in their families of origin. Students with high argumentativeness scores tended to come from consensual or pluralistic families rather than protective or lassiez-faire ones. Consensual and pluralistic families have in common that they emphasize conceptual development in their conversations, whereas protective families cut off substantive discussion to prevent stress and lassiez-faire families do not pursue either conceptual or social goals. Yeh and Chen (2004), also using non-English materials, compared the argumentativeness of residents of mainland China, Taiwan, and Hong Kong. They discovered that argumentativeness was positively associated with assertiveness and independent self-construals, and was negatively correlated to interdependent self-construals and social traditionalism. Students living in mainland China had the highest argument-approach scores

compared to students living in Taiwan or Hong Kong, and Taiwanese students had the lowest argument-avoid results.

Bresnahan, Shearman, Lee, Ohashi, and Mosher (2002) found that in China, Japan, and the U.S., men had higher argumentativeness and verbal aggressiveness scores than women. Chinese participants had higher verbal aggressiveness scores than Japanese or American respondents. The researchers also discovered that U.S. participants responded more aggressively to a personal complaint than people from China or Japan. Hsu (2007) compared U.S. and Taiwanese undergraduates, and found Americans to be higher in argumentativeness. Hsu found no sex difference among Taiwanese respondents on the argumentativeness measure. Hsu also compared English- and Chinese-language versions of the instrument for Taiwanese respondents and found no mean differences and a correlation of .79 between them.

Considered together these results are rather mixed, mainly due to the differences between mainland and Taiwanese samples, which are hard to interpret in the present context. However, the results are theoretically sensible (see Rancer & Avtgis, 2006), and afford evidence that the argumentativeness and verbal aggressiveness constructs and measures have validity in China. The current project will re-test some of the inconsistent findings, particularly the male-female differences and the comparisons of U.S. and Chinese college students.

2.2 *Argument frames*

Argument frames refer to the expectations and understandings that people have for interpersonal arguing (Hample, 2003). These scales were developed to provide a summary answer to the question, "What do people think they are doing when they are arguing?" The frames fall into three categories, which are held to be in order of argumentative sophistication. The most basic group consists of the primary goals for arguing. Those goals are *utility* (obtaining some benefit), displaying *identity*, asserting *dominance*, and *play*. All of these are self-centered motivations that treat the other person as no more than a means to achieving one's own objectives. The second group, in contrast, takes the other arguer into account in a more genuine way. These frames include *blurting* (non-blurters adapt to the other person), *cooperation* (as opposed to competition), and *civility*. The final group of frames has only one measure, called *professional contrast.* This lists a number of paired descriptors that argumentation professionals have one view about and many ordinary arguers have the opposite (e.g., is argument an

alternative to violence, or an invitation to it?). High scores on this scale indicate agreement with the professionals. Development of the measuring scales has taken place over the years (Hample, Richards, & Skubisz, 2013; Hample, Warner, & Young, 2009).

Except for some unreported work in our own multinational project, we are unaware of these measures having been used in countries or cultures outside the U.S. However, they should serve their summarizing function and provide a useful platform for comparing U.S. and Chinese orientations to interpersonal arguing.

2.3 *Taking conflict personally*

The final set of topics investigated here concerns the personalization of conflict (Hample & Cionea, 2010; Hample & Dallinger, 1995). People vary in the degree to which they take conflict personally (TCP). Again, a battery of scales is employed to measure this set of predispositions. *Direct personalization* is the most immediate measure of a person's inclination to take conflicts personally. *Stress reactions* include both physical and psychological stress experiences connected to conflict. *Persecution feelings* refer to the belief that other people are participating in the conflict in order to victimize the respondent, rather than to settle any substantive issue. *Positive* and *negative relational effects* measure people's estimates that conflicts can enhance or damage personal and workplace relationships. Finally, *valence* is a general summary of whether the respondent enjoys or dislikes interpersonal conflict.

The TCP instruments have been applied outside the U.S. (Avtgis & Rancer, 2004), but not in China to our knowledge. The Bresnahan et al. (2002) finding that Americans responded more aggressively to complaints than Chinese respondents did may be helpful, although the relationships between TCP and aggression have proved to be complex (Hample & Cionea, 2010). Comparing U.S. and Chinese respondents on the TCP measures should enhance our understanding of how arguments are approached and conceptualized in these nations because interpersonal arguments often involve disagreements and goal incompatibility.

2.4 *Summarizing argument orientations*

Collecting data on all these instruments at once permits more information than if they were explored in separate studies. We intend to examine two sorts of information: means and correlations. Whether college students from the two countries have similar mean scores will be informative, and this analysis may

permit us to say that students from one country are higher or lower on some particular measure. But a more theoretically provocative question is whether the instruments have the same dynamic interconnections in both countries. Do the measures have the same connections to one another in the U.S. and China? It is possible that national means could be comparable but the correlations could differ, or the reverse. By examining both sorts of outcomes, we hope to begin a comparative sketch of U.S. and Chinese arguing profiles.

3. *Method*

3.1 *Respondents*

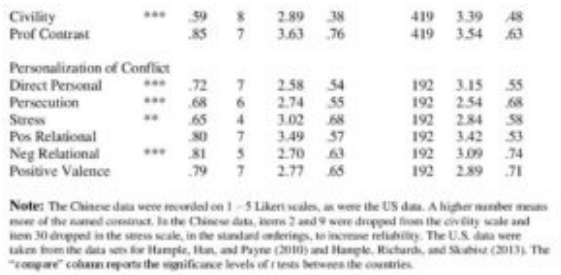
Respondents were 235 first year students at two Chinese universities, Sun Yat-sen University (N = 212, 90% of the sample) and South China Normal University (N = 23, 10% of the sample). Both universities are comprehensive multi-disciplinary institutions, located in Guangzhou, the biggest city in the Southern part of mainland China. Sun Yat-sen University is the best university in this area, ranking as one of the top ten universities in mainland China. Its enrolled students are normally elites in their generation. All the respondents were native Chinese, approximately a half of them were local (i.e. from Guangdong province), and the other half were from different parts throughout China. 86 of the respondents were men (37%) and 149 (63%) were women, and they were all about the age of 19. Respondents at Sun Yat-sen University majored in Law, and those at South China Normal University were Education majors.

3.2 *Procedures*

Survey instruments were in Mandarin, using the Chinese-language versions published in Xie, Shi, Evans & Hample (2013). Data were collected in classes. Completing a booklet typically took about half an hour.

3.3 *Measures*

Reliabilities, means, standard deviations and sample sizes for all measures are in Table 1.



Civility	***	.59	8	2.89	.38	419	3.39	.48
Prof Contrast		.85	7	3.63	.76	419	3.54	.63
Personalization of Conflict								
Direct Personal	***	.72	7	2.58	.54	192	3.15	.55
Persecution	***	.68	6	2.74	.55	192	2.54	.68
Stress	**	.65	4	3.02	.68	192	2.84	.58
Pos Relational		.80	7	3.49	.57	192	3.42	.53
Neg Relational	***	.81	5	2.70	.63	192	3.09	.74
Positive Valence		.79	7	2.77	.65	192	2.89	.71

Note: The Chinese data were recorded on 1 – 5 Likert scales, as were the US data. A higher number means more of the named construct. In the Chinese data, items 2 and 9 were dropped from the civility scale and item 30 dropped in the stress scale, in the standard orderings, to increase reliability. The U.S. data were taken from the data sets for Hample, Han, and Payne (2010) and Hample, Richards, and Skubisz (2013). The "compare" column reports the significance levels of t tests between the countries.

Table 1: Means, Standard Deviations, Cronbach's alphas, and Number of Items for Chinese and U.S. Samples Note: The Chinese data were recorded on 1 – 5 Likert scales, as were the US data. A higher number means more of the named construct. In the Chinese data, items 2 and 9 were dropped from the civility scale and item 30 dropped in the stress scale, in the standard orderings, to increase reliability. The U.S. data were taken from the data sets for Hample, Han, and Payne (2010) and Hample, Richards, and Skubisz (2013). The "compare" column reports the significance levels of t tests between the countries.

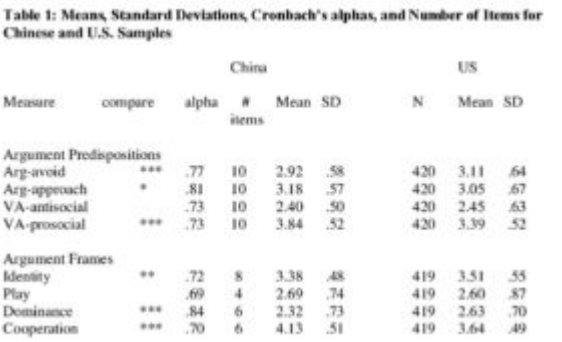


Table 1: Means, Standard Deviations, Cronbach's alphas, and Number of Items for Chinese and U.S. Samples

		China				US		
Measure	compare	alpha	# items	Mean	SD	N	Mean	SD
Argument Predispositions								
Arg-avoid	***	.77	10	2.92	.58	420	3.11	.64
Arg-approach	*	.81	10	3.18	.57	420	3.05	.67
VA-antisocial		.73	10	2.40	.50	420	2.45	.63
VA-prosocial	***	.73	10	3.84	.52	420	3.39	.52
Argument Frames								
Identity	**	.72	8	3.38	.48	419	3.51	.55
Play		.69	4	2.69	.74	419	2.60	.87
Dominance	***	.84	6	2.32	.73	419	2.63	.70
Cooperation	***	.70	6	4.13	.51	419	3.64	.49

* p < .05 ** p < .01 *** p < .001

Argumentativeness and verbal aggressiveness are both twenty item scales, each composed of two subscales. Argumentativeness includes argument-avoid and argument-approach. Verbal aggressiveness includes both an antisocial and a

prosocial subscale. Reliabilities for all four subscales were acceptable (see Table 1).

Six of the argument frames subscales were used in the present study. Scales for blurting and utility were still under development in the U.S. at the time the current project was planned. First order frames include identity display, dominance assertion, and play. Cooperation and civility represent the second order frames. The professional contrast instrument was included, and of course reflects the third order of framing. The reliability for play was very slightly less than what was wanted, and the reliability for the civility measure was low even after two items were dropped (see Table 1).

The six Taking Conflict Personally (TCP) subscales are direct personalization, persecution feelings, stress reactions, positive relational effects, negative relational effects, and valence. One item needed to be omitted from the stress scale to increase internal consistency. Reliabilities for persecution feelings and stress reactions were a bit low, but the other instruments had acceptable Cronbach's alphas (see Table 1).

3.4 *Comparison data*

U.S. data used for comparison to the present results were reported in Hample, Han, and Payne (2010) and Hample, Richards, and Skubisz (2013), and further details about the two data sets can be found in the original reports. These data were collected online from undergraduates at the University of Maryland, a large public university in the U.S. Mid-Atlantic Region. Combined sample size from the two studies was about 420 for several measures, but only 192 for the TCP instruments. These data are also summarized in Table 1.

Table 2: Sex Differences in China and the U.S.

	China		U.S.	
	Male	Female	Male	Female
Argument Predispositions				
Arg-avoid	2.82	2.97	3.06 b	3.13 b
Arg-approach	3.22	3.16	3.05	3.05
VA-antisocial	2.54 a	2.32	2.71 ab	2.33
VA-prosocial	3.70 b	3.91 ab	3.23	3.46 a
Argument Frames				
Identity	3.39	3.38	3.56 b	3.49 b
Play	2.81 a	2.62 b	2.96 a	2.45
Dominance	2.43	2.26	2.78 ab	2.57 b
Cooperation	3.95 b	4.24 ab	3.54	3.68 a
Civility	2.89	2.88	3.44 b	3.37 b
Prof Contrast	3.48	3.73 ab	3.53	3.55
Personalization of Conflict				
Direct Personal	2.55	2.60	2.96 b	3.23 ab
Persecution	2.71 b	2.75 b	2.48	2.56
Stress	2.82 b	3.14 ab	2.54	2.95 a
Pos Relational	3.46	3.50	3.43	3.41
Neg Relational	2.68	2.72	3.05 b	3.11 b
Positive Valence	2.91 a	2.69	3.13 ab	2.80

Notes: The notation "a" indicates that this score is higher than the other sex's score within that nation at $p < .05$, two-tailed. For example, Chinese men had a significantly higher verbal aggressiveness (antisocial) score than Chinese women. The notation "b" indicates that this score is higher than the same sex's score in the other nation at $p < .05$, two tailed. For example, U.S. men had a higher score on argument-avoid than did Chinese men.

Table 2: Sex Differences in China and the U.S.

4. *Results*

4.1 *Sex differences*

As summarized earlier, prior research has reported that men tend to have higher argumentativeness and verbal aggressiveness scores in both China and the U.S. Table 2 shows the relevant results for this study.

Notes: The notation "a" indicates that this score is higher than the other sex's score within that nation at $p < .05$, two-tailed. For example, Chinese men had a significantly higher verbal aggressiveness (antisocial) score than Chinese women. The notation "b" indicates that this score is higher than the same sex's score in the other nation at $p < .05$, two tailed. For example, U.S. men had a higher score on argument-avoid than did Chinese men.

Chinese men and women displayed some different patterns. Men were significantly higher in verbal aggressiveness (antisocial), interest in arguing for play, and in general valence for conflict (valence is scored so that high scores indicate positive affect). Chinese women were higher in verbal aggressiveness (prosocial), cooperative orientations to argument, professional contrast scores, and feelings of stress while engaged in conflict. The general pattern here is that, compared to Chinese women, Chinese men were more aggressive and less advanced in their understandings and expectations about interpersonal arguing. Sex differences in the U.S. are not of special interest here, except to notice that many of the same sex differences in China were also present in the U.S. data.

Same sex comparisons between the two countries are of more interest. First consider the men. Compared to U.S men, Chinese men had higher verbal aggressiveness (prosocial) scores, were more cooperatively oriented, felt more persecution in conflicts, and had greater stress reactions. U.S. men, on the other hand, were more avoidant when faced with an argument, were more antisocial, made more use of arguments to display own identity, were more oriented to domination purposes for arguing, saw arguments as more civil, took conflicts more personally, were more pessimistic about relational consequences of conflict, but enjoyed conflicts more. The pattern here is somewhat delicate, but Chinese men seemed to try to be more pleasant in argument and had markedly more stress and persecution feelings. U.S. men seemed to have a more intense ambivalence about arguing: they wanted to avoid it, but made more use of it for identity and dominance displays, worried more about negative repercussions, but took more pleasure in conflicts.

Cross-national differences also appeared for women. Chinese women, compared to those in the U.S., were more avoidant, made more use of arguing for identity and dominance displays, were more civil, took conflicts more personally, and were more pessimistic about the relational consequences of conflicts. U.S. women were more prosocial, more playful, more cooperative, more sophisticated in their understanding of the activity, and felt more persecuted and stressed by conflicts. Again, this comparative pattern is complex, but it may be that U.S. women were more engaged in arguing for both good or ill, whereas Chinese women tended to be more avoidant and personal in their arguments.

4.2 *National mean differences*

Table 1 displays the mean scores for both countries, along with results of significance tests between them. Compared to U.S. respondents, Chinese students had higher approach motivations, were more prosocial in their intentions, were more cooperative, felt more persecuted, and experienced more stress. Chinese respondents also were less avoidant, made less use of arguments to display identity or assert dominance, were less civil, took conflicts less personally, and were less pessimistic about the relational consequences of conflicts. This pattern is mixed. Chinese respondents were more inclined to participate in arguments, but not for every reason (e.g., they did not orient to identity functions). They reacted negatively to conflicts in some respects (persecution and stress) but not others (personalization and negative relational consequences). Chinese

respondents' politeness orientations were also mixed, compared to Americans'. Chinese students reported that they were comparatively less civil, but more cooperative and prosocial. Overall, the comparisons of Chinese and U.S. orientations show that the two nations' students have many differences, but these do not congeal into a clear statement to the effect that one nation enjoys arguments more, avoids them more, is more polite during them, or understands them in a simple and dramatically different way.

Table 3: Correlations among Measures, Chinese Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Arg-avoid															
2 Arg-approach	-.40														
3 VA-prosocial	.08	.12													
4 VA-antisocial	.09	.26	-.31												
5 Identity	-.18	.48	.07	.26											
6 Play	-.25	.42	-.07	.28	.37										
7 Dominance	.15	.06	-.35	.36	.23	.27									
8 Cooperation	.12	.10	.34	-.16	.15	-.10	-.27								
9 Civility	-.27	.10	-.01	-.16	-.04	.09	-.24	-.09							
10 Prof Contrast	-.26	.21	.18	-.17	.10	.10	-.36	.19	.37						
11 Dir personal	.34	-.27	-.28	.31	.01	-.07	.48	-.14	-.34	-.43					
12 Persecution	.46	-.31	-.21	.20	-.04	-.21	.43	-.03	-.39	-.35	.68				
13 Stress	.58	-.40	.03	-.01	-.10	-.35	.13	.15	-.25	-.27	.44	.56			
14 Pos Relation	-.27	.38	.32	-.05	.36	.26	-.26	.19	.28	.40	-.48	-.41	-.28		
15 Neg Relation	.46	-.26	-.17	.13	-.14	-.21	.31	-.08	-.39	-.41	.61	.57	.41	-.56	
16 Pos Valence	-.55	.51	-.07	.08	.34	.49	-.03	-.14	.31	.33	-.44	-.55	-.59	.50	-.51

Note: Correlations of |.13| or more are statistically significant at $p < .05$, two-tailed.

Table 3: Correlations among Measures, Chinese Sample Note: Correlations of |.13| or more are statistically significant at p < .05, two-tailed.

4.3 *Dynamic associations in China*

Table 3 reports correlations among the measures, restricted to the Chinese data. First, let us consider the subscales for each group of measures.

The relationships among the argumentativeness and verbal aggressiveness measures were conceptually expectable. Argument-avoid and argument-approach were correlated substantially and negatively, as were the prosocial and antisocial subscales of verbal aggressiveness. A noticeable positive correlation between argument-approach and VA-antisocial also appeared, and this matches the measures' common status as a sort of assertiveness.

The frames measures also showed substantial associations among themselves. The first order frames (identity, play, and dominance) were all positively associated. The second-order frames, cooperation and civility, were not associated at significant levels, although both had positive connections to professional contrast scores. Conceptually, cooperation and civility ought to have

been positively correlated, but the other results match theoretical understandings of the constructs.

Finally, the subscales of TCP were also intercorrelated. The measures that are sometimes collected into one measure in the U.S. (called “core TCP”) are direct personalization, persecution feelings, and stress reactions, and these three subscales were positively and very substantially associated in Table 3. The positive and negative relational consequences subscales had their expectable large negative correlation, and the negative consequences scale was directly associated with the core TCP measures. Valence had very strong correlations with the other subscales, all in the conceptually expectable directions.

Some mention should also be made of noticeably strong patterns from one scale battery to another, especially for particularly important measures. Conflict valence was strongly correlated with nearly every other measure in the study, indicating that this instrument affords very good predictions of how much a Chinese respondent will enjoy interpersonal conflicts. Another key measure is professional contrast, which summarizes the sophistication with which participants understand face-to-face arguing. Professional contrast scores were also well predicted here. Those with the most sophisticated understandings were also those with the highest scores on argument-approach, prosocial motivations, cooperativeness, civility, optimism about relational consequences, and enjoyment of conflict; these people also had the lowest scores for avoidance, antisocial motivations, dominance impulses, core TCP, and pessimism about relational consequences of interpersonal conflicts. Chinese respondents who were most eager to engage argumentatively were those who saw the identity, dominance, and play uses for arguing; who had notably low scores on the core TCP measures; who believed that conflicts improve relationships; and who enjoyed the experience of an interpersonal conflict. The most antisocially aggressive individuals in the sample were also sensitive to the identity, dominance, and play potentials for arguing; had low scores for cooperation, civility, and professional contrast; and tended to take conflict personally.

Table 4: Correlations among Measures, U.S. Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Arg-avoid															
2 Arg-approach	-.63														
3 VA-prosocial	.12	.05													
4 VA-antisocial	.08	.08	-.52												
5 Identity	.08	.03	-.13	.29											
6 Play	.10	-.05	-.19	.32	.48										
7 Dominance	.01	.12	-.37	.51	.27	.31									
8 Cooperation	.13	-.06	.44	-.31	.12	-.15	-.27								
9 Civility	-.05	.02	.26	-.19	.12	.17	-.26	.25							
10 Prof Contrast	.06	-.05	.25	-.25	.08	.03	-.26	.30	.53						
11 Dir personal	-.15	.34	.09	-.06	.01	-.19	.01	.13	-.08	-.08					
12 Persecution	.11	.11	-.04	.17	.13	-.03	.10	-.00	-.09	-.10	.60				
13 Stress	-.28	.41	.21	-.13	-.12	-.32	-.05	.13	-.08	-.06	.39	.36			
14 Pos Relation	.12	-.17	.01	.02	.11	.27	.19	.01	.06	.03	-.18	-.21	-.25		
15 Neg Relation	-.08	.14	-.04	.16	.01	.06	.16	-.12	-.15	-.14	.04	-.06	.17	.09	
16 Pos Valence	.43	-.41	-.13	.16	.24	.27	.16	-.02	.06	.09	.08	.26	-.27	.08	-.45

Note: Correlations of |.12| or more are statistically significant at $p < .05$, two-tailed, for correlations not involving the Taking Conflict Personally measures. For those, the parallel value is |.15|.

4.4 *Comparisons of Chinese and U.S. associations*

Finally, Table 4 reports correlations parallel to those in Table 3, but drawn from the U.S. samples. Since those associations were discussed in the original reports, here we will only take notice of similarities and differences when comparing Tables 3 and 4 with one another.

In sum, comparison of Tables 3 and 4 reveals a number of differences in detail that might be worth pursuing in the future, but the overall patterns are generally comparable. This means that correlational analyses do not point to any radically different variable-to-variable dynamics in China, as compared to the U.S. The variables seemed to be performing similar functions in both countries.

5. *Discussion*

In general, the results in our study and its comparisons to the U.S. data indicate that Chinese and U.S. respondents were often similar, but still differed in complex ways in their understanding of interpersonal arguing, and several findings worthy of discussion appeared.

The most striking one is that our study did *not* show that Chinese respondents were more avoidant of confrontation and interpersonal argumentation, compared to Westerners. On the contrary, the national mean scores show that Chinese respondents actually had higher argument approach motivations and higher verbal aggressiveness scores than the U.S. students. This shows that Chinese were comparatively less avoidant to confrontation, and more oriented to participate in interpersonal argumentation. Hence the allegation that China is a nation where conflict avoidance is viewed more positively than direct confrontation and argumentation seems to be problematic. The results of our study have disproved this claim, and have made its flaws much more apparent.

As we mentioned in the first part of this paper, many scholars have argued for this allegation from the perspective of traditional Chinese philosophy and culture. The gist of their argument could be summarized as follows: the values of harmony and coherence are prominently stressed within Chinese culture and philosophies

(namely, Confucianism, Taoism and Buddhism), but confrontation and argumentation are threats to the realization of these values, since they involve disagreement and goal incompatibility. This would seem to undermine interpersonal relationships, so they will be strongly discouraged in Chinese social life. This appears to be an over-simplification of the way these cultural values could influence ordinary people's thinking and behaviors. It may also reflect an unsophisticated understanding of the ways in which face-to-face arguing can be socially productive. In fact, given that the prevailing values of harmony and coherence in Chinese culture, the cogency of the avoidance position boils down to the correctness of two other claims: that in Chinese philosophical theories the realization of those values *do preclude* confrontation and argumentation, and that in Chinese people's social-cultural practices conflicts and argumentative behaviors are *truly recognized* as damages to interpersonal relationships. We believe that neither of these two premises is correct, but here we only take issue against the latter one.

Consider first the argument frames results. These measures were designed to reveal the understandings that people have for interpersonal arguing. Compared to U.S. undergraduates, Chinese respondents made less use of arguments to display *identity* or assert *dominance*, were noticeably more *cooperatively* oriented, and had higher scores on *professional contrast*. All these results implied that Chinese people indeed had a more sophisticated understanding of arguing. They could better keep their self-centered motivations under restraint, and take the other arguer into consideration in a more genuine way. Hence in China interpersonal arguing was far more than a confrontation of disagreements and a struggle of achieving one's own objectives. Chinese respondents seemed more attuned to the socially constructive potentials of interpersonal arguing than were the U.S. participants.

Next consider the results from the measures of personalization of conflict and verbal aggressiveness, both of which are supposed to reflect people's views of arguing as being destructive and corrosive to relationships. Chinese respondents were more prosocial, they took conflicts less personally, and were less pessimistic about the relational consequences of conflicts. Moreover, the correlations among the measures also revealed that Chinese respondents who were most eager to participate in arguing were those who believed that conflicts improve relationships, and who enjoyed the experience of an interpersonal conflict. These

results could be taken to mean that in their social lives Chinese people were actually less inclined to recognize interpersonal arguing as damaging to interpersonal relationships.

Interpersonal arguing is as common and important a sort of interpersonal communication in China as in the U.S. In fact, the present study gives evidence that Chinese undergraduates were more sophisticated in their understandings of arguing than Westerners. This implies that interpersonal arguing may well be more pleasant and constructive in China than in the U.S. Our data leads to conclusions that are quite unlike those of some previous scholars.

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References
Avtgis, T. A., & Rancer, A. S. (2004). Personalization of conflict across cultures: A comparison among the United States, New Zealand, and Australia. *Journal of Intercultural Communication Research,* 33, 109-118.
Becker, C. B. (1986). Reasons for the lack of argumentation and debate in the Far East. *International Journal of Intercultural Relations,* 10(1), 75-92.
Bresnahan, M. J., Shearman, S. M., Lee, S. Y., Ohashi, R., & Mosher, D. (2002). Personal and cultural differences in responding to criticism in three countries. *Asian Journal of Social Psychology,* 5(2), 93-105.
Garrett, M. (1993), Pathos reconsidered from the perspective of classical Chinese rhetorical theories, *Quarterly Journal of Speech,* 79(1), 19-39.
Hample, D. (2003). Arguing skill. In J. O. Greene & B. R. Burleson (Eds.), *Handbook of communication and social interaction skills* (pp. 439-478). Mahwah, NJ: Erlbaum.
Hample, D., & Cionea, I. A. (2010). Taking conflict personally and its connections with aggressiveness. In T. A. Avtgis & A. S. Rancer (Eds.), *Arguments, aggression, and conflict: New directions in theory and research* (pp. 372-387). New York, NY: Routledge, Taylor, and Francis.
Hample, D., & Dallinger, J. M. (1995). A Lewinian perspective on taking conflict personally: Revision, refinement, and validation of the instrument. *Communication Quarterly*, 43, 297-319.

Hample, D., Han, B., & Payne, D. (2010). The aggressiveness of playful arguments. *Argumentation*, 24, 405-421.
Hample, D., Richards, A. S., & Skubisz, C. (2013). Blurting. *Communication Monographs*, 80, 503-532.
Hample, D., Warner, B., & Young, D. (2009). Framing and editing interpersonal arguments. *Argumentation*, 23, 21-37.
Hsu, C. F. (2007). A cross-cultural comparison of communication orientations between Americans and Taiwanese. *Communication quarterly*, 55(3), 359-374.
Infante, D. A., & Rancer, A. S. (1982). A conceptualization and measure of argumentativeness. *Journal of Personality Assessment*, 46, 72-80.
Infante, D. A., & Wigley, C. J. (1986). Verbal aggressiveness: An interpersonal model and measure. *Communication Monographs,* 53, 61-69.
Jensen, J. (1987). Rhetorical Emphasis of Taoism. *Rhetorica* 5, 219-229.
Jensen, J. (1992). Values and practices in Asian argumentation. *Argumentation and Advocacy*, 28(4), 153-166.
Kennedy, G. A. (1980). *Classical Rhetoric and Its Christian and Secular Tradition from Ancient to Modern Times*, Chapel Hill: The University of North Carolina Press.
Kincaid, D. L. (eds.) (1987). *Communication theory: eastern and western perspectives*, London: Academic Press.
Leung, K. (1988). Some determinants of conflict avoidance. *Journal of Cross-Cultural Psychology,* 19, 35–49.
Leung, K. (1997). Negotiation and reward allocations across cultures. In P. C. Earley & M. Erez (Eds.), *New perspectives on international industrial and organizational psychology* (pp. 640-675). San Francisco: Jossey-Bass.
Lin, Y., Rancer, A. S., & Kong, Q. (2007). Family communication patterns and argumentativeness: An investigation of Chinese college students. *Human Communication*, 10,121-135.
Lin, Y., Zhao, J., & Zhao, F. (2010). Exploring constructive aggressive communication in China: Its cultural roots, strategies, and new developments. In T. Avtgis & A. Rancer (Eds.). *Arguments, aggression, and conflict: New directions in theory* (pp. 82-99). New York: Routledge Press.
Lu, X. & Frank, D. (1993), On the study of the ancient Chinese rhetoric/bian, *Western Journal of Communication,* 57, 445-463.
Oetzel, J. G., & Ting-Toomey, S. (2003). Face concerns in interpersonal conflict: A cross-cultural empirical test of the face negotiation theory. *Communication Research*, 30, 599-624.

Oetzel, J. G., Ting-Toomey, S., Masumoto, T., Yokichi, Y., Pan, X., Takai, J., & Wilcox, R. (2001). Face and facework in conflict: A cross-cultural comparison of China, Germany, Japan, and the United States. *Communication Monographs*, 68, 235-258.
Oliver, R. (1971). *Communication and culture in ancient India and China.* NY: Syracuse University Press.
Rancer, A. S., & Avtgis, T. A. (2006). *Argumentative and aggressive communication.* Thousand Oaks, CA: Sage.
Triandis, H. (1995). *Individualism and collectivism*. Boulder, CO: Westview.
Xie, Y., Shi, S., Evans, S., & Hample, D. (2013, May). Exploring the meaning of "argument" in China. *Paper presented at the meeting of the Ontario Society for the Study of Argumenation*, Windsor, Ontario, Canada.
Yeh, J. H., & Chen, L. (2004). Cultural values and argumentative orientations for Chinese people in Taiwan, Hong Kong, and Mainland China. *Intercultural communication: A global reader,* 51-64.

ISSA Proceedings 2014 – Denying The Antecedent Probabilized: A Dialectical View

Abstract: This article provides an analysis and evaluation for probabilistic version of arguments that deny the antecedent (DAp). Stressing the effects of premise retraction vs. premise subtraction in a dialectical setting, the cogency of DAp arguments is shown to depend on premises that normally remain implicit. The evaluation remains restricted to a Pascalian notion of probability, which is briefly compared to its Baconian variant. Moreover, DAp is presented as an exam-question plus evaluation that can be deployed as a learning assessment-instrument at graduate-level.

Keywords: affirming the consequent, delay tactic, denying the antecedent, dialectics, inductive logic, *modus ponens, modus tollens*, probabilistic

independence, probabilistic relevance, retraction, subtraction

1. *Introduction*

We treat the evaluation of DAp, a probabilistic version of what classical logic correctly treats as the formal fallacy of *denying the antecedent* (DA), i.e., the deductively invalid attempt at inferring the conclusion ~*c* from the premises *a*->*c* and ~*a*, where a stands for antecedent, *c* for consequent, and ~ for negation. Examples include:

1. Had my client been at the crime scene (a), then he would probably be guilty (c). But he wasn't (~a), so he probably isn't (~c).
2. If the lights are on (a), then probably someone's at home (c). But the lights are out (~a), so probably no one is (~c).
3. If the product sells (a), then our marketing measures should probably be trusted (c). But it doesn't (~a), so measures should be reviewed (~c).

Here,
(1) states a counterfactual conditional ("had"),
(2) an indicative one ("are"), and that in
(3) might even sustain a deontic reading ("should"). Disregarding such differences, we proceed to treat such DAp-arguments on the following schema, its formal version becoming clearer soon:

(DAp) If a then probably c. But not a, so probably not c.
Pf(c)=Pi(c|a)>Pi(c). But Pi(a)=0, so Pf(~c)>Pi(c).

As should be uncontroversial, if natural language instances of DAp instantiate a probabilistically valid inference, or argument, then only if the relevant probability values are right. A probabilistic version of modus ponens (MPp) can be stated as the conditional probability of c given a, i.e., P(c|a), where P(c|a) directly depends on P(~c|a) whenever *P(c|a)=1−P(~c|a)* holds, which is the complement-relation of Pascalian probability (see Sect. 5.3 on the Baconian). A probabilistic version of denying the antecedent (DAp), *P(~c|~a)*, contrasts by depending on not one, but three values: *P(c|~a), P(a), P(c).* This asymmetry between MPp and DAp is mirrored by one between probabilized versions of modus tollens (MTp) and affirming the consequent (ACp), not being treated here (see Oaksford & Chater, 2008; 2009).

As will be seen below, since particularly P(c|~a) is necessary to evaluate DAp, but

need not be readily available from context, evaluations of DAp regularly remain conditional on analysts' assumptions with respect to P(c|~a). Our main objective is to present one such assumption—broadly one of relevance, referred to as AR, below—then trace AR's effects on arguers' dialectical commitments, in a context where PROPONENT (PRO) argues MPp, and OPPONENT (OPP) responds with DAp. On assumption, PRO can respond to OPP's DAp either by retracting or subtracting prior commitment; the first proves to be a delaying-tactic, and the validity of OPP's DAp is shown to depend on commitments reconstructed for PRO.

We introduce DAp as an exam-question (Sect. 2), then discuss the choice of logic (3.1), the projection of linguistic forms onto logical forms (3.2), and the retraction vs. subtraction distinction (3.3). Having provided an evaluation (4), we argue for the plausibility of AR (5.1), explain how retraction delays interaction (5.2), and briefly contrast this broadly Pascalian result with a Baconian notion of probability. Our conclusions are in Sect. 6.

2. *DAp as an exam-question*

An evaluation of a probabilistic version of denying the antecedent (DAp) in a dialectical setting might be assigned as an exam-question, such as the following, where PRO argues MPp in lines 1 and 2, to which OPP responds, in line 3, by denying PRO's antecedent, and subsequently raising the claim in line 4, thus arguing DAp. Assuming OPP to have the last word—OPP-statements "trump" PRO-statements— PRO's response options are limited to either of those in lines 5a or 5b, provided OPP is committed to PRO's claim in line 1. So, in line 6, can PRO reasonably deny OPP's claim in line 4?

(1) PRO: a makes c more probable.
(2) PRO: a is the case.
(3) OPP: a is not the case.
(4) OPP: So, not c is more probable.
(5a) PRO: I retract (2).
(5b) PRO: I subtract (2), i.e., I agree to (3).
(6) PRO: But I disagree with (4).

Task: Assume that (3) trumps (2), i.e., that OPP has the last word, and that OPP commits to (1). Evaluate line (6) as reasonable, or not, vis-à-vis (1-4), for both the variants (5a) and (5b). Trace and justify additional assumptions.

We now present a task-solution that presupposes an evaluation of DAp vis-à-vis a Pascalian notion of probability.

3. *Evaluating DAp*

3.1 *Choice of Logic*

As holds generally for argument-evaluation, an evaluation of DAp proceeds via a projection of natural language material (aka linguistic form) onto a logical form, itself provided through analyst-choice among available logics. The logic employed below is inductive, consistent with the Kolmogorow-axiomatization of probability, thus modeling a Pascalian notion of probability. As our evaluation of DAp holds relative to this logic only, external criticism of the evaluation should elaborate on inadequacies in the Pascalian notion of probability, if any (see Sect. 5.3).

3.2 *Linguistic and Logical Form*

The application of logical forms (Lo-F) to linguistic forms (Li-F) yields a reconstruction of Li-F at Lo-F level, technically a projection of the Li-F onto the Lo-F. Analysts must subsequently ask: Is a particular Lo-F validity-assessable, i.e., is the projection *complete*? It will be only if the Li-F readily provides information necessary to evaluate the Lo-F with respect to validity. Conversely, incomplete projections only require analysts to add information at Lo-F level**[i]**. Once completed, the evaluative result may then be read-off, and transferred to the Li-F. The yield is an evaluation conditional on information added.

To appreciate the projection of statements containing 'probable' and its cognates, compare the Li-F and potential Lo-F instances, below, where $Pi(c|a)>Pi(c)=1-Pi(\sim c)$ states the initial probability of c given a, Pi(c|a), to exceed the initial probability of c, Pi(c), which equals one minus the probability of the logical complement, ~c, since $P(\beta)=1-P(\sim\beta)$ holds, and similarly for conditional probabilities: $P(\beta|\alpha)=1-P(\sim\beta|\alpha)$.

Above, we had seen PRO to utter the Li-F 'a makes c more probable' in line (1). Onto which Lo-F, now, should this utterance be projected?

(i) a makes c more probable – $Pi(c|a)>Pi(c)=1-Pi(\sim c)$
(ii) a makes c more probable than not c. – $Pi(c|a)>Pi(\sim c)=1-Pi(c)$
(iii) … than not c given a. – $Pi(c|a)>Pi(\sim c|a)=1-Pi(c|a)$
(iv) … than not c given not a. – $Pi(c|a)>Pi(\sim c|\sim a)=1-Pi(c|\sim a)$

The Lo-F in line (i) yields perhaps the most faithful projection, as its content most closely mirrors that of 'a makes c more probable'. While (ii) to (iv) need not be implausible candidates, they nevertheless add content to PRO's utterances. We return to (i) in Sect. 4.

Except for the point-probability *Pi(c)=Pi(~c)=0.5,* the utterances in (i) and (ii) mutually and directly imply their negations. After all, (i) compares *Pi(c|a) to Pi(c), so Pi(c|a)* is also compared to Pi(~c), the latter being the complement of Pi(c), as in (ii). Similarly, (iii) compares Pi(c|a), again merely internally, to its complement, Pi(~c|a). In contrast, (iv) compares *Pi(c|a) to Pi(~c|~a),* which, importantly, does not directly dependent on Pi(c|a). Note that Pi(~c|~a) had, in Sect. 1, been seen to state a probabilistic version of denying the antecedent (DAP).

On the assumption that contents expressed by *Pi(a), Pi(c), Pi(c|a), and Pi(c|~a)* are contingent, when Pi(c|~a) cannot simply be obtained from PRO's Li-F, then Pi(c|~a) should be stipulated in view of PRO's commitments with respect to Pi(a), Pi(c), Pi(c|a), effectively compensating for cases where PRO avoids an explicit commitment with respect to Pi(c|~a). Sect. 4 will identify one such compensation, consisting in an assumption of relevance assumption (AR). First, we turn to PRO's dialectical options in lines 5a and 5b (see Sect. 2).

3.3 *Retraction vs. Subtraction*

A non-formal version of the retraction vs. subtraction distinction is found, among others, in Godden & Walton (2004). In probabilistic terms, to retract amounts to PRO no longer holding a commitment with respect to the probability of a. As we now argue, retraction would only be represented unfaithfully as a PRO-update to the unspecific commitment Pf(a)=[0,1], where the subscripted 'f' indicates the final probability after retraction. To subtract, in contrast, amounts to having stated that a is false, and can be represented as a PRO-update to the specific commitment P(~a)=1.

One may assume that, having used MPP at time t0, PRO is at time t1 committed to *Pi(c|a)>Pi(c) and Pi(a)=1*. After retraction, her commitments at t2 could update to Pi(c) and Pf(a)=[0,1], where [0,1] marks the closed interval from zero to one, including the end-points, and Pi(c) is the prior probability of c. Alternatively, at t2, PRO's commitments could update merely to Pi(c). In the first case, given Pf(a)=[0,1], PRO cannot meaningfully maintain a commitment to *Pi(c|a)>Pi(c), for if Pf(a)=[0,1]* and Pi(c|a)>Pi(c) together entail anything, then they entail the

probability of c given a to be greater than the probability of c, for any value of $P(a)=1-P(\sim a)=[0,1]$. But this is incompatible with the probability of a impacting on the probability of c. So a could not, in any standard sense, remain relevant to c, for a would now raise the probability of c come what may, given any probability-value of a, including 0 and 1 (see Sect. 5.2). To avoid as much, retraction should be modelled such that, at t2, PRO updates her commitments merely to Pi(c).

After subtraction, PRO's commitments with respect to a have been updated from Pi(c|a)>Pi(c) and Pf(a)=1, at t1, to Pi(c|a)>Pi(c) and Pf(~a)=1, at t2. They now starkly contrast with PRO's commitment at t1. Such flipping—aka 'take it back and claim the opposite'—makes it conditionally relevant for PRO to incur a comparative commitment with respect to Pi(c|~a) vs. Pi(c). Note that this is unlike the case of retraction. In both cases, of course, OPP may well ask PRO to compare Pi(c|~a) with Pi(c). In the exam-case (Sect. 2), this comparison was not made.

What may one reasonably assume about this comparison on behalf of PRO? Introduced as part of the evaluation of DAP in the next section, the assumption (AR) compares Pi(c|~a) with Pi(c). Along with other assumptions, AR will be seen to yield the very conclusion OPP seeks to establish with her DAP argument: Pf(~c)>Pf(c).

4. *Conditional evaluation of DAp*

4.1 *PROPONENT and OPPONENT commitments*

In evaluating the OPPONENT's DAp, one supposes that 'if a then c', i.e., a→c, can be interpreted probabilistically such that P(a→c)=P(c|a), an assumption referred to as 'the equation' (Oaksford & Chater, 2008; 2009). One should start from the weakest possible PROPONENT-commitment in this context (see Sect. 3.2), namely that a provides some support to c, as expressed in (7). Again, Pi(c) marks the initial or prior, and Pf(c) the final or posterior probability.

(7) $Pf(c)=Pi(c|a)>Pi(c)$ – [PROPONENT-commitment]**[ii]**

As we saw, if inductive support is measured over the closed interval from 0 to 1, and reflects a Pascalian notion of probability, then a degree of support for a proposition α entails that of its complement via $P(\alpha)=1-P(\sim\alpha)$, and likewise for conditional probabilities via $P(\alpha|\beta)=1-P(\sim\alpha|\beta)$. Moreover, Pi(c|a) is given by the principle of conditionalization (PC), aka the definition of conditional probability:

(PC) $Pi(c|a)=P(c\&a) / P(a)$ – [definition of conditional probability]

Since $P(c\&a)=P(a|c)P(c)$, by substitution, the PC yields Bayes' theorem (BT)**[iii]**, to which we return in Sect. 4.3:

(BT) $P(c|a)=(P(a|c)P(c)) / P(a)$ – [Bayes' theorem]

With retraction (see Sect. 3.3), the support for c in the absence of a can only depend on the prior probability Pi(c). So, if conditionalization on a results in Pi(c|a)>Pi(c), as stated in (7), then retracting a leaves the probability of c at its prior value, Pi(c). This is what Godden and Walton's (2004) claim—that retraction does not incur new commitments—amounts to when using probabilities. As OPP was to have the "last word" (see Sect. 2), one is concerned not with retraction, but with subtraction of a, i.e., conditionalization on ~a. Hence, OPP is committed to (8), which says that ~a is negatively relevant to c, as ~a makes ~c more probable than it was initially:

(8) $Pf(\sim c)=Pi(\sim c|\sim a)>Pi(\sim c)$ – [OPPONENT-commitment]
Already in genuinely probabilistic contexts, where $0<P(\alpha)=1-P(\sim\alpha)<1$, the inequalities in (7) and (8) depend on suitable probability values. As the next subsection shows, such values need not be readily available in a given natural language context.

4.2 *Finding Pi(~a|~c)*
To illustrate the issue, assume that—unlike the extremal cases in Sect. 2, where either P(a)=0 or P(a)=1—PROP assigns 0.5<Pi(a)<1, so that a is more probable than not, and moreover choses the likelihood, Pi(a|c), such that Pi(c|a) is rendered sufficiently high for the purpose at hand, i.e., beyond some threshold, t, to which we return in the next section. But assume also that PROP remains uncommitted to the exact value of Pi(c). Therefore, Pi(c) need not be fixed, but can in fact range over the interval satisfying Pi(c|a)>Pi(c) given the chosen likelihood, Pi(a|c). To reach a probabilized dialectical scenario, assume finally that PRO responds to OPP's objection by adopting OPP's claim that 0.5<Pi(~a)<1. When evaluating this move, one must conditionalize on Pi(~a) to find Pi(~c|~a). Because of PRO's loose stance with respect to Pi(c) before hearing OPP's objection, however, that Pi(a)>0.5, and that Pi(c|a) were deemed sufficiently high simply does not entail a definite value for Pi(~a|~c), nor only values that—upon conditionalization on ~a—leave Pi(~c|~a) sufficiently low (see Sober, 2002). But some such discrete

value is required to calculate with this instance of Bayes' theorem: *Pf(~c|~a)=(Pi(~a|~c)Pi(~c))/Pi(~a).* See Oaksford and Chater (2008; 2009) and Wagner (2004) for an analytical characterization of the bounds that arise when letting *0.5<P(c|a),P(~c|~a)<1*, so that both terms count as probabilistically supported, or confirmed, if *0.5<P(a),P(~a)<1*.

The commitments in (7) and (8) are here treated as contingencies, and so do not express general truths about probabilistic support relations between antecedents and consequents. Hence, particularly OPP's desired conclusion—that ~c is sufficiently probable given ~a—won't follow from any old assignment of probability values, even if *0<P(α)=1−P(~α)<1*. The next subsection supplies information that leaves OPP's claim—that *Pf(~c|~a)>Pf(c|~a)*—acceptable through introducing the assumption AR on behalf of PRO.

4.3 *Bayes' Theorem, Jeffrey Conditionalization, and AR*

In our example in Sect. 2, Pi(a) and Pi(~a) were assigned the values zero or one. In both extremal cases, however, premise subtraction remains ill-defined in the context of Bayes' theorem. After all, when P(a)=1, then a is treated as indubitable, upon which the theorem ceases to offer guidance for the subtraction of a; likewise when P(~a)=1. In fact, subtraction of what is beyond doubt does widely count as an arational move in this context, a move BT does not guide one way or another. Therefore, rather than employ BT, one can turn to Jeffrey conditionalization (JC) in order to address premise subtraction (see, e.g., Jeffrey, 2004):

(JC) *Pf(c)=Pi(c|a)Pf(a)+Pi(c|~a)Pf(~a)* – [Jeffrey conditionalization]**[iv]**

In our case, when the proponent claims that a makes c more probable (see Sect. 2), she can be assumed committed to Pf(c)>t^3Pi(c), where t is a threshold given by a probability value arbitrarily smaller than Pf(c), and at least as large as Pi(c). Further, if Pf(a)=1 and so Pf(~a)=0, i.e., a is true, then (JC) reduces to its left hand term:

(9) *Pf(c)=Pi(c|a)Pf(a)>t*

As an assumption of relevance (AR) that will be crucial for our evaluation, the proponent's initial claim—that a raises the probability of c to a value above some threshold t—may be assumed to entail the following:

(AR) If ~a (also) raises the probability of c, then at most to t, i.e., Pi(c|~a)£t.

Sect. 5.1 will argue why it is reasonable to assume AR on behalf of Pro. Let us first complete the evaluation of DAp.

4.4 *Evaluative result*

When, per our example-case, a is subtracted because a is deemed false, i.e., Pf(~a)=1, and so Pf(a)=0, then—in analogy to (9)—JC reduces to its right hand term:

(10) *Pf(c)=Pi(c|~a)Pf(~a)£t*

Because Pi(c|~a)=1−Pi(~c|~a), it follows for the standard threshold of probabilistic support t=0.5 that, upon subtracting a, i.e., Pf(~a)=1, the value of Pf(c) falls below t only if Pi(~c|~a)>t.**[v]** The evaluation, therefore, depends not only on the initial assumption Pf(c)>Pi(c), as stated in (5), but additionally on AR—i.e., Pi(c|~a)£t—and t=0.5, which together effectively state OPP's desired conclusion (i.e., line 4 in Sect. 2). After all, once Pi(c|~a) falls to, or below, the value 0.5, then c can no longer receive sufficient support in the event that ~a, since—analogously to (9)—we have it that *Pf(~c)=Pi(~c|~a)P(~a),* and so if *P(~a)=1, then Pf(~c)=Pi(~c|~a).*

Hence, rather than *Pf(c)=Pi(c|a)>Pi(c)*, as in (7), PRO would have had to be committed to:

(11) *Pf(c)=Pi(c|a)>t>Pi(c) and Pi(c|~a)£t*, for t=0.5,

for OPP to establish probabilistic support for ~c by subtracting a. Therefore, with a view to the example in Sect. 2, (5b) is unreasonable given AR. In contrast, line (5a) is at least not immediately unreasonable. But, as Sect. 5.2 argues, (5a) delays the evaluation that becomes available under AR.

5. *Discussion*

This section briefly discusses why AR is reasonable, shows retraction to be a delaying-tactic, and inquires whether the evaluative result transfers to a non-Pascalian notion of probability.

5.1 *The reasonability of AR*

Recall that, because the example in Sect. 2 lacked information on Pi(c|~a) that our inductive logic did require in order to evaluate DAp, Sect. 4.3 had introduced

an assumption of relevance (AR) on behalf of PRO, namely *Pi(c|~a)£t for t=0.5*. The evaluative result (Sect. 4.4) was then seen to depend on AR. Evaluating AR requires considering whether PRO can deny AR, provided she is committed, at t1, to both *Pf(c)=Pi(c|a)>Pi(c) and Pi(a)=1*, then retracts only the latter commitment by updating, at t2, to P(~a)=1 (see Sect. 3.3). A straightforward way of addressing this consists in considering if PRO remains consistent were she to deny AR. As we saw, Pi(c|a)>Pi(c) expresses that a is positively relevant to c. So, at t1, does PRO incur a contradiction were she to commit to Pi(c|a)>Pi(c), but reject Pi(c|~a)£Pi(c)?

What if PRO were to reject Pi(c|~a)£Pi(c), i.e., accept Pi(c|~a)>Pi(c), and so be committed both to Pi(c|a)>Pi(c) and to Pi(c|~a)>Pi(c)—in words: both a and ~a raise the probability of c. In this case, were a and ~a to provide the same probabilistic support to c, i.e., Pi(c|a)=Pi(c|~a)>Pi(c), then PRO would well have avoided the commitment that c and a are probabilistically independent—which is expressed by Pi(c|a)=Pi(~c|a). But without the assumption AR qualifying the support that a and ~a lend to c as a differentially large support, the question would arise why PRO had initially offered a in support of c, when ~a could have served as well. Hence, not so much to remain consistent, but to remain relevant: at t1, if ~a shall provide some support to ~c, then such support should be lower than the support that a confers onto c, exactly as expressed by AR.

In contrast, interpreting PRO's Li-F 'a makes c more probable' from the outset to mean 'a makes c more probable than not c given a', i.e., *Pf(c|a)>t£Pf(~c|a)*, necessitates setting the threshold to t=0.5, since *Pf(c|a)=1−Pf(~c|a)*. Moreover, if P(~a)=1, then OPP's conclusion Pf(~c|~a) takes a value greater than t, which in turn shows how PRO's subtraction of a, i.e., the change in commitment from P(a)=1 to P(a)=0, establishes, or concedes, the cogency of OPP's DAp.

Besides AR, the two complement-relations P(α)=1−P(~α) and P(β|α)=1−P(~β|α) for conditional probabilities remain crucial to our evaluation, because information not provided at Li-F was inferred by means of these relations. We discuss both in Sect. 5.3, and now proceed to argue that, here, retraction is at best a delaying-tactic.

5.2 *Retraction as a delaying-tactic*

In Sect. 3.3, we had seen that retraction amounts to avoiding a commitment with respect to the probability of a, including a lose commitment such as P(a)=[0,1].

Assume, then, that PRO has successfully avoided as much, and so is committed, at t2, merely to Pi(c|a)>Pi(c), and Pi(c). As argued above, this set of commitments allows PRO to disagree, in line (6) of Sect. 2, with OPP's claim that Pf(~c)>Pf(c). The disagreement is not immediately unreasonable because, after retraction, information necessary for OPP—and for analysts—to establish Pf(~c)>Pf(c) was seen to be unforthcoming from PRO's commitments.

As PRO had, at t1, claimed that P(a)=1, even after retraction, OPP can demand that PRO commit to some comparison of Pi(c|a) with Pi(c|~a) vis-à-vis the threshold t=0.5, provided this OPP-move is not otherwise blocked. Moreover, provided that PRO would act in an irrelevant manner were she to reply with a comparison other than AR—as argued in Sect. 5.1—then OPP can still establish her claim in line (6). So when interlocutors can elicit commitments and criticize irrelevant claims, retraction merely delays the OPPONENT's conclusion, minimally by one turn.

These considerations all highlight the role of the assumption AR. As AR compares Pi(c|~a) and Pi(~c|~a), being terms directly related via the complement principle Pi(c|~a)=1−Pi(~c|~a), it should be of interest to compare this evaluation with a Baconian notion of probability, where this principle does not hold.

5.3 *Baconian probability*

Jonathan L. Cohen (1980) has coined the term 'Baconian' for a notion of probability whose central assumptions differ from those of its Pascalian counterpart. Crucially, Baconian probabilities are non-additive; therefore, the above complement-relations do not generally hold, and also conditional probabilities may be defined differently. Being ordinal values, Baconian probabilities can be compared but, unlike Pascalian probabilities, one cannot readily add, subtract, multiply, or divide them (see Cohen, 1980; Schum, 1991; Hajek & Hall, 2002; Hájek, 2012; Spohn 2012).

For our case, which was seen to depend on AR, it may thus well be the case that, for instance, *Pi(c|a)=0.8>Pi(c)=0.5*, while nevertheless Pi(~c|a)=0, rather than Pi(~c|a)=0.2, as the complement-principle of the Pascalian calculus has it. So, a may make c more probable to an extent e, without it being entailed that the probability of ~c given a is calculated as 1−e. The scale of Pascalian probability runs upward from disproof to proof, while the Baconian scale runs upward from non-proof, or no evidence, to proof (see Cohen, 1980). Evidence for α having been

provided thus remains compatible with no evidence having been provided for its negation, ~α.

Baconian probability is particularly applicable to the legal domain. For instance, the probability that a defendant is guilty may be assumed to be determined by evidence typically provided by the prosecution. Is the prosecutor's evidence less than conclusive, however, then whatever evidence is lacking will, on the Pascalian notion, entail a corresponding disproof of the defendant's guilt (compared the first example in Sect. 1). On the Baconian notion, in contrast, the prosecutor's evidence in support of the defendant's guilt compares independently to evidence forwarded on behalf of the defendant's innocence, or lack thereof. In the absence of such evidence, then, the probability of the defendant's innocence would (hopefully) register at 0. And if disproving evidence is forwarded, the probability of the defendant's innocence (hopefully) registers at values independent of the probability of the defendant's guilt.

We cannot claim to have done any justice to the Baconian notion of probability, but may nevertheless conclude that the evaluative result (Sect. 4) need not without further ado transfer to a non-Pascalian notion of probability. So analysts are required to decide, for the particular case and in view of the natural language material, whether a Baconian or a Pascalian notion of probability is more appropriate.

6. *Conclusion*

Presupposing a Pascalian notion of probability, we have provided an analysis and evaluation for probabilistic version of arguments that deny the antecedent (DAp). Stressing the effects of premise retraction vs. premise subtraction in a dialectical setting, the cogency of DAp arguments was shown to depend on a premise that normally remains implicit, namely Pi(c|~a)£t, for t=0.5, which we had identified as a relevance assumption. Moreover, premise retraction was shown to be a delaying-tactic as long as the opponent can ask the proponent to incur new commitments. Generally, the cogency of DAp arguments was seen to depend on commitments ascribed to the proponent. As we have stressed, the evaluative result is restricted to a Pascalian notion of probability, which was briefly compared to its Baconian variant. On these qualifications, the abstract version of DAp presented in Sect. 2 can be deployed as a learning assessment-instrument at graduate-level.

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NOTES

i. Other tweaks are subtracting information, and changing its order (permutation); both modifications, however, normally presuppose possessing information that is necessary for an evaluation.

ii. (7) leaves open the exact degree of support; one of its measures, S(c|a), can be defined as: S(c|a)=Pi(c|a)−Pi(c)>0 (Korb, 2003, 44; Howson & Urbach, 1993, 117).

iii. Dropping the subscripts, BT comes in two equivalent versions:
(BT) P(c|a)=(P(a|c)P(c)) / P(a)
(BT*) P(c|a)=P(a|c)P(c) / (P(a|c)P(c)+P(a|~c)P(~c))
One reaches BT* by substitution in BT, since P(a)=P(a|c)P(c)+P(a|~c)P(~c). Here, P(a|c) and P(a|~c) express likelihoods, namely the probability of a given c, and the probability of a given ~c, respectively. P(a|c) can be read as the impact of a on P(c). P(a|~c) is also known as the false positive rate. To express the classically valid modus pones inference with (BT), if aÉc is true, then P(c|a)=1. So the rate of exceptions, P(~c|a), is zero since P(c|a)=1−P(~c|a). See Oaksford and Chater (2008; 2009).

iv. (JC) has the posterior probability of the conclusion, Pf(c), depend on the posterior probability of the antecedent, Pf(a)=1−Pf(~a), as well as the prior probabilities Pi(c|a) and Pi(c|~a), the latter two terms being mutually independent. Jeffrey conditionalization generalizes the Bayesian theorem, where (BT) corresponds to the limiting case that arises by setting one of JC's summands to 1. To verify, recall that Pf(c)=Pi(c|a). Since P(a&c)=P(c&a)=P(a|c)P(c)=P(c|a)P(a), by substitution, if Pf(a)=1, then the expression Pf(c)=Pi(c|a)Pf(a)+Pi(c|~a)Pf(~a) reduces to Pf(c)=Pf(a&c), so Pf(c|a)=P(a|c)P(c)/P(a) becomes Pf(c|a)=Pf(a&c). The case is analogous when

Pf(~a)=1.

v. To assume that Pi(~c|~a)>t for t=0.5 amounts to a probabilized version of the conditional perfection strategy—where, as part of the analysis, -> is perfected to <->—for this very assumption renders the conditional 'a then c' convertible, probabilistically speaking.

References

Cohen, J. L. (1980). Some historical remarks on the Baconian conception of probability. *Journal of the History of Ideas,* 41 (2), 219-231.

Godden, D., & Walton, D. (2004). Denying the antecedent as a legitimate argumentative strategy: a dialectical model. *Informal Logic*, 24, 219-243.

Hajek, A., & Hall, N. (2002). Induction and Probability. In: P. Machamer & M. Silberstein (Eds.), *The Blackwell Guide to the Philosophy of Science* (pp. 149-172). Oxford, UK: Blackwell.

Hájek, A. (2012). Interpretations of probability. In: E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Winter 2012 Edition), <http://plato.stanford.edu/archives/win2012/entries/probability-interpret/> (4 Sept 2014).

Howson, C., & Urbach, P. (1993). *Scientific reasoning: the Bayesian approach,* 2nd ed. La Salle, IL: Open Court.

Jeffrey, R. (2004). *Subjective probability: The real thing*. Cambridge: Cambridge University Press.

Korb, K. (2003). Bayesian informal logic and fallacy. *Informal Logic*, 23, 41-70.

Schum, D. A. (1991). Jonathan Cohen and Thomas Bayes on the analysis of chains of reasoning. In: E. Eells & T. Maruszewski (Eds.), *Probability and Rationality: Studies on L. Jonathan Cohen's Philosophy of Science.* Amsterdam: Rodopi.

Spohn, W. (2012). *The laws of belief.* Oxford: Oxford University Press.

Oaksford, M., & Chater, N. (2008). Probability logic and the modus ponens – modus tollens asymmetry in conditional inference. In: N. Chater & M. Oaksford (Eds.), *The Probabilistic Mind: Prospects for Bayesian Cognitive Science* (pp. 97-120). Oxford: Oxford University Press.

Oaksford, M., & Chater, N. (2009). Précis of Bayesian rationality: The probabilistic approach to human reasoning. *Behavioural and Brain Sciences*, 32, 69-120.

Sober, E. (2002). Intelligent design and probability reasoning. *International Journal for Philosophy of Religion*, 52, 65-80.

Wagner, C.G. (2004). Modus tollens probabilized. *British Journal for Philosophy of*

Science, 55, 747-753.

ISSA Proceedings 2014 ~ An Argumentative Approach To Policy 'Framing'. Competing 'Frames' And Policy Conflict In The Roşia Montană Case

ABSTRACT: This paper proposes a new theorization of the concept of 'framing', in which argumentation has a central role. When decision-making is involved, to 'frame' an issue amounts to offering the audience a salient and thus potentially overriding premise in a deliberative process that can ground decision and action. The analysis focuses on the Roşia Montană case, a conflict over policy that led, in September 2013, to the most significant public protests in Romania since the 1989 Revolution.

KEY WORDS: decision, deliberation, frame, framing, metaphor, policy, practical argument, Roşia Montană

Introduction

This article develops an approach to framing theory from the perspective of argumentation theory (Fairclough & Fairclough 2012, 2013) by analyzing the public debate on the proposed cyanide-based gold mining project at Roșia Montană (Romania). It puts forward a view of 'framing' as a process of offering an audience a salient and potentially overriding premise that they are expected to use in deliberation leading to decision and action (Fairclough 2015, Fairclough forthcoming b). It also aims to make an empirical contribution to the study of the Roșia Montană case, a policy conflict that has set the Romanian government and a multinational company against the Romanian population and, in September 2013, led to the most intense public protests since the fall of communism. The outcome

was the rejection by the Romanian Parliament of a draft law that would have given the green light to the largest open-cast gold mining operations in Europe.

This study is part of a larger project that analyzes a corpus of over 600 Romanian press articles, covering the months of August and September 2013, with a twofold purpose: (a) to develop and test an argumentative conception of the process of framing; (b) to gain insight into how four major Romanian newspapers have attempted to reflect and influence the public debate, by finding out which aspects of the policy conflict were selected and made salient in the media, and how they were intended to function in the process of public deliberation. For reasons of space, we will not analyze this corpus here, but illustrate the framework with a smaller corpus of campaign material (leaflets, slogans, placards, website information).

ROȘIA MONTANĂ: A Brief Overview

Roşia Montană is a *commune* of 16 villages, located in the Western Carpathians, in an area rich in gold and other precious metals, but also in natural beauty and tradition. It has a recorded history of over 2000 years and has been a gold-mining area since Roman times. The region is however plagued by a range of socio-economic problems which demand a strategy of sustainable development (Plăiaș 2012). The controversial mining project advanced by the Canadian corporation Gabriel Resources Ltd. in partnership with the Romanian state (renamed Roșia Montană Gold Corporation, henceforth RMGC, in 2000) has claimed to provide just such a solution, by "bring[ing] one of the world's largest undeveloped gold projects to production" (*The Roșia Montană Gold & Silver Project: A Project for Romania* 2014). The project would require large-scale cyanide-leaching procedures in order to extract an estimated 314 tons of gold and 1,480 tons of silver from 4 open-cast pits over a 16-year period. While the economic benefits to the Romanian state were invariably presented by the corporation as extraordinary, Romania's projected equity stake in the company was only 19.31%, the other 80.69% being owned by Gabriel Resources, according to company data in 2014.

Mădroane (2014) has investigated the Canadian company's argument in favour of the project in terms of the framework for analyzing and evaluating practical arguments developed by Fairclough & Fairclough (2012). According to this framework, a practical proposal is advanced on the basis of premises specifying the intended goals and circumstances of action and a means-goal relation, and is

evaluated via an argument from consequence. The circumstances include natural, social and institutional facts that enable or constrain the action. Some of these facts constitute the 'problem' to be resolved by means of the proposed action (as 'solution'). RMGC's overall problem-solution argument, as summed up on the company's website (under the heading *Proiectul Roșia Montană/ Roșia Montană Project* n.d.) rests upon circumstantial premises that represent the area as being in a disastrous situation in four areas – economy, environment, patrimony, community – and lacking any viable alternatives for sustainable development. Joint economic benefits (for the corporation, the local area and the Romanian state), as intended goals of action, are prominent on the website, and a number of commitments (as constraints on action) are emphasized. The company claims to be committed to norms of environmental and archaeological protection and rehabilitation, and to respecting the local population's right to property and right to work. Aiming to address all the problems of the local area, the company allegedly holds the key to transforming an "impoverished community with no real alternative" (problem) in accordance with a "vision" (goal) of "prosperity, growth, clean environment", offering a "long term future for Roșia Montană" (*The Roșia Montană Gold & Silver Project: A Project for Romania* 2014). At the centre of the RMGC campaign to win over public opinion in Romania has been the "packaging" of the project as *the* much-needed answer to the economic and social problems of the region, as well as a welcome contribution to Romania's economic growth.

From the very beginning, the Roșia Montană project has been extremely controversial due to the perceived infringement of existing legislation (mining laws, property rights, national heritage protection, planning regulations), the confidentiality of the terms of the concession licence, the intense pressure exerted by RMGC via aggressive lobbying and advertising campaigns, as well as the superficial nature of the public consultation process and the suspicion of institutional corruption. Expert analyses of the project have pointed out numerous risks and potentially unacceptable costs: the permanent destruction of the local environment, together with long-term environmental and public health risks; the irretrievable loss of ancient cultural heritage (Roman mine galleries); the destruction and displacement of local communities; the comparatively small economic benefits to the Romanian state (the small number of jobs created during the mining operations). The alleged benefits have been dismissed in scientific reports and studies published by reputable national and international research institutions, including the Romanian Academy, the Bucharest Academy of

Economic Studies, and the Union of Romanian Architects. Through the ongoing *Save Roșia Montană* Campaign, the Alburnus Maior Association (an NGO set up by Roșia Montană inhabitants in 2000) has become the main pillar of an increasingly strong public protest movement. As a consequence, the technical review of the Environmental Impact Assessment report, a crucial step for RMGC in the process of obtaining the environmental permit, was suspended in 2007. However, the process was resumed in 2010, in the general context of economic recession. On August 27, 2013, the Romanian Government sent to Parliament a draft law which was removing all legal obstacles and giving the corporation significant new powers. Instantly, this sparked off strong public protests in many Romanian cities, lasting over 6 weeks: at the peak of these protests, 20,000-25,000 people were demonstrating daily on the streets of Bucharest. At the moment of writing, the company has lost significant ground following the parliamentary rejection of the special draft law (on November 19, 2013, by the Senate, and on June 3, 2014, by the Chamber of Deputies) and several other unfavourable court decisions. For details of the case see Goţiu (2013); Egresi (2011); Cocean (2012); Vesalon & Creţan (2013); see Chiper (2012) for a discourse-analytical approach.

Analytical Framework: Arguments And Frames

3.1. Practical arguments and deliberative activity types

Practical argumentation is argumentation about what ought to be done, as opposed to theoretical argumentation about what is the case (Walton 2006, 2007a, 2007b; Walton et al. 2008). Deliberation is an argumentative genre in which practical argumentation is the main argument scheme. Van Eemeren (2010, pp. 142-143) distinguishes among *genres*, *activity types* and concrete *speech events*. A particular policy debate (e.g. on the Roșia Montană mining project) instantiates the more abstract category of policy debate as activity type, which in turn instantiates the abstract genre of deliberation. Deliberation is a genre common to many activity types; its intended outcome is a normative-practical conclusion that can ground decision and action. Policy making involves the weighing together of reasons in favour and against particular courses of action (i.e. deliberation), and on this basis putting forward a policy decision.

Practical argumentation can be viewed as argumentation from circumstances, goals and means goal relations (Fairclough & Fairclough 2011, 2015, forthcoming a, b):

The agent is in circumstances C.
The agent has a goal G.
(Goal G is generated by a particular normative source – desire, duty, etc.)
Generally speaking, if an agent does A in C then G will be achieved.
Therefore, the Agent ought to do A.

Practical reasoning is a causal argumentation scheme (van Eemeren & Grootendorst 2004). Actions have both intended and unintended effects, and the same effect can result from a multiplicity of causes. The unintended effects can be such that the action had better not be performed, even if the intended effect (goal) can be achieved by doing A. If this is the case, then a *critical objection* to A has been exposed and the hypothesis that the agent ought to do A has been falsified (or rebutted). A pragmatic argument from negative consequence (the left-hand side of Figure 1) can potentially rebut the practical proposal (conclusion) itself. This argument has the following form:
If the Agent adopts proposal A, consequence (effect) E will follow.
Consequence E is unacceptable.
Therefore, the Agent ought not to adopt proposal A.

A succinct way of representing the type of argumentation in deliberative activity types is as follows, where the conclusion of the practical argument from goals, values and circumstances is tested by a pragmatic argument from consequence (Fairclough 2015, Fairclough forthcoming a, b):

Figure 1. Practical reasoning in deliberative activity types: the deliberation scheme

As Figure 1 suggests, we reason practically from an assessment of the circumstances of action (this includes the problem we have identified, but also other facts enabling or constraining action), from the goals and values whose realization we are pursuing, from means-goal relations, as well as from premises that refer to the potential consequences of our proposed action, in light of which

it may follow that we ought to discard our proposal for action or, on the contrary, we may go ahead with it. If the consequences are, on balance, unacceptable, then the proposal is unreasonable and ought to be abandoned. If however the potential consequences are not unacceptable, or if – in the event that negative consequences should materialize – it would be possible to change course or redress undesirable developments, then the agent may tentatively proceed with A (always subject to future rebuttal, as unacceptable consequences may always come to light at a later date).

A critical objection against a proposal (e.g. an unacceptable consequence or cost) is one that cannot be overridden by other reasons in favour (e.g. by any potential benefit). Deliberation involves a 'weighing' of reasons, and the conclusion is arrived at on balance, in a context of facts that both enable and constrain action, and in conditions of uncertainty and risk. The institutional facts (obligations, rights, commitments) of the legal, political, moral domain (what Searle 2010 calls deontic, desire-independent reasons) are, in principle (though not always in practice) non-overridable. For example, an agent might come to the conclusion that Proposal A ought to be abandoned because it is against the law, full stop, regardless of any benefits that might have counted in favour of going ahead with A.

3.2. Framing theory

According to Entman, writing in 1993, Framing Theory is a good example of a "fractured paradigm", with a highly "scattered conceptualization" at its core. While everybody in the social sciences talks about framing, there is no clear understanding of what frames are and how they influence public opinion (Entman 1993, p. 51). Many often-cited definitions in the literature are vague and unhelpful, e.g. those of frames as "organizing *principles* that are socially shared and persistent over time" (Reese 2001, p. 11), or as "*principles* of selection, emphasis and presentation composed of little tacit theories about what exists, what happens, and what matters" (Gitlin 1980, p. 6). The same type of criticism still occurs twenty years later (see D'Angelo & Kuypers 2010), with Nisbet noting the persistent loose usage of the term 'frame' and every researcher's tendency to "reinvent the wheel" by identifying their own (often highly idiosyncratic) set of frames, without thereby producing a clear operationalization of the concept that might be used across different sets of data (Nisbet 2010, pp. 45-46).

There is at least one clear definition of 'frames' in the cognitive semantics

literature, though this is not the definition that most framing theorists working in political communication and media studies seem to start from. This is Fillmore's (1985, 2006) definition of frames, as developed in Frame Semantics and the FrameNet project (International Computer Science Institute n.d.) – a new dictionary concept, in which words are defined in relation to world knowledge. On this understanding, frames are *structures* of inter-related concepts, such that in order to understand any one concept it is necessary to understand the entire structure (frame). To understand what risk is, one needs to understand the entire RISK frame, involving agents, situations, actions, intended gains or benefits, potential harm and victims, an element of chance, and so on (Fillmore & Atkins 1992). Any one individual concept within a frame will activate the whole frame (e.g. 'week' activates the whole system of calendric terms: 'day', 'month', 'year').

A substantial part of framing theory research seems to be underlain by an understanding of the framing *process*, rather than of *frames* as Fillmorian systems of concepts. On this view, "framing refers to the process by which people develop a particular conceptualization of an issue"; framing therefore involves taking or promoting a particular *perspective* or *angle* on an issue. It is this selective angle that is responsible for the highly vexing phenomenon of "framing effects", where "(often small) changes in the presentation of an issue or an event produce (sometimes large) changes of opinion" (Chong & Druckman 2007, p. 104). The most often cited definition in these terms is Entman's view of framing as *selection* and *salience*:

Framing essentially involves *selection* and *salience.* To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described. Typically frames diagnose, evaluate, and prescribe… (Entman 1993, p. 52).

Entman's selection-and-salience definition is a definition of *framing*, not *frames*. Framing involves inclusion, exclusion, selective emphasis, putting forward a particular conceptualization, a particular angle. I may, for example, choose to emphasize the benefits of a course of action and correspondingly de-emphasize the costs, in order to sway an audience towards accepting my proposal. However, unless frames are also structures of inter-related concepts, what are we selecting from? How can one element be selected and highlighted unless it is part of a

structure where other elements are correspondingly de-emphasized?

Although Entman does not develop his view in relation to a theory of argument, his definition is compatible with an approach from argumentation theory. If the framing process aims to define and diagnose problems, as well as suggest solutions, then it is a form of practical, deliberative reasoning. In framing an issue in a particular way, a communication source is supplying those particular premises that may lead the audience towards a particular conclusion or line of action. The communication source can talk about an issue by means of any complex speech act – argument, narrative, description, explanation; the audience however are expected to use these as sources of premises in the construction of arguments leading to decision and action. I suggest that, from the audience's perspective, the aspects that are being selected and made salient are elements of a DECISION frame.

The gist of the argumentative approach to framing being proposed here is this: to frame an issue is to offer the audience a salient and thus potentially overriding premise in a deliberative process that can ground decision and action. Values, goals, potential consequences, as well as various facts pertaining to the context of action can all be made selectively more salient in an attempt to direct the audience towards a particular, preferred conclusion. This may also involve the use of metaphors (Lakoff & Johnson 1980), analogies and persuasive definitions (Walton 2007a) to redefine facts in rhetorically convenient ways, thus lending support either to the conclusion that the proposed action is recommended or not recommended.

Based on the deliberation scheme, a DECISION frame can be outlined (on the model of Fillmore's RISK frame), including arguers/agents in a situation of incomplete knowledge (uncertainty and risk), putting forward and evaluating proposals for action, amongst which they will choose and decide in favour of one. They have goals and values, and are acting in a context of facts (circumstances), some of which enable or constrain action – for example there are laws, rules, norms that constrain what can be done. Their proposal has potentially negative consequences, some of which will be critical objections against the proposal. Within this frame, as system of inter-related concepts, various premises can be emphasized in principle as being the most relevant and important reasons, i.e. the ones that should arguably decide which course of action is adopted. For example, it can be argued that a policy proposal should be adopted because it will create

jobs, or it can be argued that it should not be adopted because of the negative impact on the environment. What is being made more salient and potentially overriding in these two arguments are the intended positive consequences (goals) and the (unintended) negative consequences, respectively. In a process of weighing reasons, the audience may come to see either the benefits (jobs) or the negative consequences (pollution) as "heavier" or more relevant reasons, and the conclusion (and decision) they will reach may shift accordingly. Alternatively, the circumstances of action may be made salient (the severity of the problem, the external constraints on action, the uncertainty and risks involved) and presented as potentially overriding other reasons.

Briefly, making one element of the deliberation scheme more salient, while correspondingly de-emphasizing others, is expected to result in a shift in the decision for action that the audience will arrive at, given that the salient element is expected to override non-salient elements in the process of weighing reasons. It does not follow, of course, that the audience will be actually influenced in this way, and that they will automatically ground their decisions in the premises made salient through framing. In real-world contexts, framing effects are weakened by the public's exposure to alternative arguments, their ability to come to their own conclusion, as well as by their pre-existing beliefs and values (Sniderman & Theriault 2005; Chong & Druckman 2007).

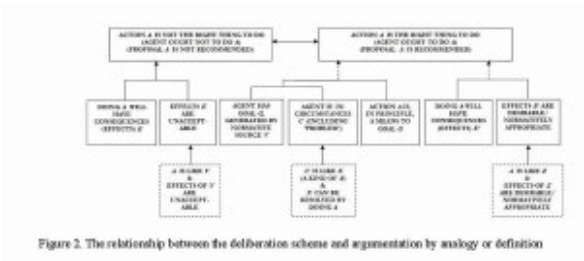


Figure 2. The relationship between the deliberation scheme and argumentation by analogy or definition

An additional mechanism is often at work, whenever metaphors, analogies or persuasive definitions are embedded under the premises of the deliberation scheme (Figure 2). Premises of the form *a* = *b* (*a is similar to b*, or *a is a kind of b*) can provide justification for various premises in the arguments from goals or

consequences. For example, it can be argued that a policy proposal will have potentially unacceptable negative consequences if these can be seen to amount to a form of *robbery* or *treason*; if this is so, then the proposal should not be adopted. If, on the contrary, the context of action is one of *national emergency* or *crisis* that the proposal can successfully resolve, then it follows that the proposal should go ahead. Similarly, it can be argued that the effects of the policy will be in fact beneficial, because they amount to actually *saving* the Roșia Montană area from either poverty or environmental catastrophe. If the proposed action amounts to salvation from harm or danger, then the action is recommended (Figure 2). The spin or bias that such persuasive definitions or metaphors will introduce into the premises of an argument will be reflected, via their entailments, in the particular conclusion that can be reached on the basis of these premises (Fairclough 2015, forthcoming b).

Analysis

This article is part of a larger study of the August-September 2013 coverage of the Roșia Montană case in four Romanian daily broadsheets: *Adevărul*, *Jurnalul Naţional*, *Gândul* and *Cotidianul*. Our search for the keyword 'Roșia Montană' in the online archives of the newspapers resulted in 670 articles, divided as follows: 323 in *Adevărul*, 217 in *Gândul*, 93 in *Jurnalul Naţional* and 67 in *Cotidianul.* A detailed discussion of this corpus is beyond the scope of this short paper and is being undertaken elsewhere. In order to test and illustrate how the analytical framework described in section 3 can shed light on framing processes, including framing effects, we will discuss a few examples taken from the campaigns in favour and against the mining project, and particularly from the slogans used by the protesters.

The campaign in favour of the project (see RMGC's official website, *RMGC: Roșia Montană Gold Corporation – Proiectul Roșia Montană* n.d.) tended to emphasize the company's intended goals, among which the benefits to the Romanian state and the local area – jobs and local development, income for the Romanian state – and particular circumstances of action: poverty, underdevelopment, as well as people's right to work. In general, the benefits were said to outweigh the costs, and the impact on the environment and cultural heritage was presented as minimal, with emphasis on the redressive action allegedly in place. Thus, the argument went, given the significant economic benefits to all parties concerned, particularly the Romanian side, and given that these would clearly outweigh any

negative impacts, and also given the population's right to work (a deontic reason, in principle non-overridable), the Roșia Montană project ought to go ahead. By contrast, not allowing the project to proceed would not only damage these goals, but would also undermine the local population's rights. Framing the deliberative process in this way, i.e. making these particular premises salient and potentially overriding, was intended to support a decision in favour of the project.

Arguments against the project (e.g. the Alburnus Maior Association website: rosiamontana.org – Campania Salvaţi Roșia Montană n.d.) emphasized primarily a range of unacceptable negative consequences: the destruction of four mountains, the environmental and health impact of the cyanide-based technology (12,000 tons of cyanide would be used and 13 million tons of mining waste produced each year, eventually leaving behind a lake containing 215 million cubic metres of cyanide-contaminated water); the definitive loss of a precious resource that the Romanian state ought to be able to exploit in its own interest. These were presented as negative consequences that cannot be overridden by any benefits, particularly as job creation would be minimal and only for a limited period of time. The argument was also sometimes framed as an issue of inter-generational justice (it is our duty towards future generations to keep the gold in the country for future exploitation) and predominantly as a legal issue: the violation of existing (environmental) laws and (property) rights was deemed unacceptable, and the draft law was also said to be "unconstitutional". Framing the conflict in terms of unacceptable negative consequences that cannot be overridden by any benefits and in terms of non-overridable deontic reasons (rights, duties, laws, the Constitution) was intended to sway the deliberative process in favour of the conclusion that the project ought to be rejected.

The framing of the conflict developed over time, and new premises were made salient in the attempt to influence public opinion. Starting as a battle over the environment, the conflict eventually developed into a battle over democracy and the rule of law in Romania and against the capture of the state by the interests of global corporations (Vesalon & Creţan, p. 449). Reporting on the situation in Romanian last September, an article in *The Guardian* (Ciobanu 2013) cited an NGO activist as saying the following:

It is very interesting that such a revolt began with a case of protecting the environment, but this is not only about the environment … (…) The Roșia Montană case – in which you see legislation custom made to serve the interests of a

corporation – highlights some failures of both democratic institutions and of the economic system, capitalism in a broader sense… Roșia Montană is the battle of the present and of the next decades… It illustrates the end of post-1989 cleavages [communist vs. anti-communist, European vs. non-European] and the emergence of new ones. People today confront a corrupted political class backed up by a corporation and a sold out media; and they ask for an improved democratic process, for adding a participatory democracy dimension to traditional democratic mechanisms.

The conflict therefore was no longer only about the environment, but about how global corporations can buy out national governments and national media and force them to act in their interests, as well as about the population's demand for a truly representative democracy (one slogan was: "Not in my name" ("Nu în numele meu"). The unacceptability of bending legislation so as to facilitate the handing over of Romania's resources to a multinational corporation, mostly for the benefit of the latter and for the personal gain of politicians, was reflected in the slogan: "A corporation cannot dictate legislation" ("Nu corporaţia face legislaţia"). The slogan captured the protest against the subordination of the state to corporate interest – what Monbiot (2001) has theorized as the "captive state", or the "corporate takeover" of states, a situation where the power of multinational corporations is threatening the foundations of democratic government and undermining national sovereignty. Framing the deliberative process in this way made the legal and political aspects salient and potentially overriding, emphasizing that allowing a corporation's interests to prevail was against the Constitution and against Romania's democratic form of government. As deontic constraints on action, these reasons were intended to lend overriding support to the argument against the project.

A widely used metaphor was that of the Roșia Montană project as a case of *robbery*, with slogans saying "Halt the Great Robbery" ("Opriţi Marele Jaf"), or "Thieves" ("Hoţii"), framing the project by primary reference to the rule of law. These metaphors fit into the argument from negative consequence, supporting the premise that the effects will be unacceptable. (On what grounds are the consequences unacceptable? On the grounds that the whole project amounts to the illegal attempt to appropriate someone else's property.) To say that the project is framed as *robbery* is to say that the premise containing the metaphor is made salient; as a consequence, via its entailments (i.e. if it is robbery, then it is

illegal, or a crime), the metaphor will lead to only one possible conclusion: if the project is illegal or criminal, it follows that it should be abandoned (Action A/Policy A is not recommended).

Other metaphors function in a similar way. The protests were called a *revolution* (with placards saying: "Our generation's own revolution" ("Revoluţia generaţiei noastre") or "Europe's Green Revolution", while the government's stance was equated with a *declaration of war* (in publicity material saying: "The Government and RMGC have declared war on us all", "Guvernul şi RMGC ne-au declarat război") or with a *siege* ("do not forget that Romania is now under siege…", "nu uitaţi că România e acum în stare de asediu"), as well as with the attempt to *sell* the country out to a foreign corporation (in slogans saying: "My Romania is not for sale", "România mea nu e de vânzare"). Such metaphors provide justification for various premises in the deliberation scheme and support the conclusion that the project ought not to go ahead.

Conclusion

This paper has tried to make a contribution to framing theory by suggesting that framing is equivalent to a process of making salient, and thus potentially overriding, a particular premise in a deliberative process that the audience is supposed to engage in. This process is supposed to lead the audience to decision and (possibly) action. Based on how they weigh a variety of reasons against each other, which in turn may depend on which reasons have been made salient and which have been omitted, and on what importance or weight has been attached to them in the framing process, the audience is supposed to reach a particular practical-normative conclusion and on this basis a decision to act in a particular way. Framing effects may be stronger or weaker depending on how the framing process interacts with the audience's own beliefs and values, and on the audience's exposure to alternative arguments, as well as their ability to weigh these arguments together in a deliberative process.

What is selected and made salient in the framing process is a particular premise in a deliberation scheme, i.e. a structure with a number of elements which can be selectively filled in or instantiated. Figure 2 shows a range of premises that can be selected and made salient, in the attempt to direct the conclusion of the arguments involved in the Roșia Montană debate: the circumstances of action, for example the institutional constraints (laws, rights) or the problem that needs solving (poverty); the goals or intended benefits (jobs, national revenue); the

unintended negative consequences (environmental degradation, loss of cultural heritage), and so on. In addition, premises that attempt to support the premises of practical reasoning (containing metaphors, analogies, persuasive definitions) can be made salient, and their entailments will be transferred upwards towards particular conclusions (if the project amounts to "robbery", then it is illegal; if it is illegal, it should be abandoned).

This study is developed in several other papers. Fairclough (2015) and Fairclough (forthcoming b) develop the argumentative approach to framing in more detail, with application to the austerity debate in the British media and the parliamentary debate on university tuition fees. Starting from the brief analysis presented here, a systematic analysis of the entire media corpus of 670 media texts, in terms of the framework outlined here, will be carried out in Mădroane (in preparation).

REFERENCES

Chiper, S. (2012). Roșia Montană and its publics: governance and participatory democracy at community and corporate level. *Argumentum: Journal of the Seminar of Discursive Logic, Argumentation Theory and Rhetoric*, *10*(1), 82-105.

Chong, D., & Druckman, J. N. (2007). Framing theory. *Annual Review of Political Science*, *10*, 103-127. doi: 10.1146/annurev.polsci.10.072805.103054.

Ciobanu, C. (2013, September 17). Romanians mobilise in protest against gold mine plans, *The Guardian*. Retrieved from http://www.theguardian.com/environment/2013/sep/17/romanians-mobilise-gold-mine.

Cocean, P. (Ed.). (2012). *Roșia Montană in universal history* (Romanian Academy, Babeș-Bolyai University, ICOMOS Romania). Cluj: Cluj University Press.

D'Angelo, P., & Kuypers, J. A. (Eds.) (2010). *Doing news framing analysis. Empirical and theoretical perspectives.* New York: Routledge.

Eemeren, F. H., van & Grootendorst, R. (2004). *A systematic theory of argumentation. The pragma-dialectical approach*. Cambridge: Cambridge University Press.

Eemeren, F. H., van (2010). *Strategic maneuvering in argumentative discourse*. Amsterdam: John Benjamins.

Egresi, I. (2011). The curse of the gold: discourses surrounding the project of the largest pit-mine in Europe. *Journal of Studies and Research in Human Geography*, *5*(2), 57-68.

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication 43*(4), 51-58.
Fairclough, I., & Fairclough, N. (2011). Practical reasoning in political discourse: the UK government's response to the economic crisis in the 2008 Pre-Budget Report. *Discourse & Society*, *22*(3), 243-268.
Fairclough, I., & Fairclough, N. (2012). *Political discourse analysis: A method for advanced students*. London: Routledge.
Fairclough, I., & Fairclough, N. (2013). Argument, deliberation, dialectic and the nature of the political: A CDA perspective. *Political Studies Review*, *11*(3), 336-344.
Fairclough, I. (2015). Evaluating policy as argument: the public debate over the first UK austerity budget. *Critical Discourse Studies*, DOI: 10.1080/17405904.2015.1074595.
Fairclough, I. (forthcoming a). A dialectical profile for the evaluation of practical arguments. In B. J. Garssen, D. Godden, G. Mitchell & A. F. Snoeck Henkemans (Eds.), *Proceedings of the 8th Conference of the International Society for the Study of Argumentation.* Amsterdam: SicSat.
Fairclough, I. (forthcoming b) Deliberative discourse. In J. Richardson & J. Flowerdew (Eds.), *The Routledge Handbook of Critical Discourse Analysis*. London: Routledge.
Fillmore, C. J. (1985). Frames and the semantics of understanding. *Quaderni di Semantica 6*(2), 222-254.
Fillmore, C. J. (2006). Frame semantics. In Brown, E. K. (Ed.), *Encyclopedia of Language and Linguistics*. (Vol. 4, pp. 613-620). Oxford: Elsevier.
Fillmore, C. J., & Atkins, B. T. (1992). Toward a frame-based lexicon: The Semantics of Risk and its neighbours. In A. Lehrer & E. F. Kittay (Eds.), *Frames, fields, and contrasts: New essays in semantic and lexical organization* (pp. 75-102). Mahwah, NJ: Erlbaum.
Gitlin, T. (1980). *The whole world is watching: Mass media in the making and unmaking of the New Left*. Berkeley: University of California Press.
Goţiu, M. (2013). *Afacerea Roșia Montană*. Cluj-Napoca: TACT.
International Computer Science Institute at Berkeley, California (n.d.). FrameNet Project. Retrieved from https://framenet.icsi.berkeley.edu/fndrupal/.
Lakoff, G., & Johnson, M. (1980). *Metaphors we live by,* Chicago: University of Chicago Press.
Mădroane, I. D. (2014). Citizens' Consultations – Public spaces of argument evaluation? A view from critical discourse analysis. *Romanian Journal of English*

Studies, *11*(1), 203-214 (1-12). doi: 10.2478/rjes-2014-0024.
Mădroane, I. D. (in preparation). Framing the Roșia Montană Protests: Arguments in the Romanian Press.
Monbiot, G. (2001). *Captive state. The corporate takeover of Britain.* London: Pan Books.
Nisbet, M. C. (2010). Knowledge into action: Framing the debates over climate change and poverty. In P. D'Angelo & J. A. Kuypers (Eds.), *Doing news framing analysis* (pp. 43-83). New York: Routledge.
Plăiaș, I. (2012). Reflection upon the usefulness of the Roșia Montană project. In P. Cocean (Ed.), *Roșia Montană in universal history* (Romanian Academy, Babeș-Bolyai University, ICOMOS Romania) (pp. 58-67). Cluj: Cluj University Press.
Proiectul Roșia Montană/ Roșia Montană Project (n.d.). RMGC: Roșia Montană Gold Corporation – Proiectul Roșia Montană [Roșia Montană Gold Corporation Website]. Retrieved from http://www.rmgc.ro/ proiectul-rosia-montana/proiectul-minier/timeline-proiect-rosia-montana.html.
RMGC: Roșia Montană Gold Corporation – Proiectul Roșia Montană (n.d.). Roșia Montană Gold Corporation Website. Retrieved from http://www.rmgc.ro/.
Reese, S. D. (2007). Framing public life: A bridging model for media research. In S. D. Reese, O. H. Gandy & A. E. Grant (Eds.), *Framing public life: Perspectives on media and our understanding of the social world* (pp. 7-31). Mahwah, NJ: Erlbaum.
rosiamontana.org – Campania Salvaţi Roșia Montană (n.d.). Alburnus Maior Association Website. Retrieved from http://www.rosiamontana.org/en.
Searle, J. R. (2010). *Making the social world. The structure of human civilization,* Oxford: Oxford University Press.
Sniderman, P.M., & Theriault, S.M. (2004). The Structure of political argument and the logic of issue framing. In P. M. Sniderman & W. E. Saris (Eds.), *Studies in public opinion: Attitudes, nonattitudes, measurements, error and change* (pp. 133-155). Princeton: Princeton University Press.
The Roșia Montană Gold & Silver Project: A Project for Romania (2014, February 25). Gabriel Resources: Roșia Montană Website, Investors Presentations [BMO Capital Markets 23rd Global Metals & Mining Conference]. Retrieved from http://gabrielresources.com/documents/ GBU_Pres_Feb2014_BMO_000. pdf
Vesalon, L., & Creţan, R. (2013). "Cyanide kills!" Environmental movements and the construction of environmental risk at Roșia Montană, Romania. *AREA*, *45*(4), 443-451.

Walton, D. (2006). *Fundamentals of critical argumentation*. New York: Cambridge University Press.
Walton, D. (2007a). *Media argumentation*. New York: Cambridge University Press.
Walton, D. (2007b). Evaluating practical reasoning. *Synthese*, 157, 197-240.
Walton, D., Reed, C., & Macagno, F. (2008). *Argumentation schemes*. New York: Cambridge University Press.

ISSA Proceedings 2014 ~ A Dialectical Profile For The Evaluation Of Practical Arguments

ABSTRACT: This paper proposes a dialectical profile of critical questions attached to the deliberation scheme. It suggests how deliberation about means and about goals can be integrated into a single recursive procedure, and how the practical argument from goals can be integrated with the pragmatic argument from negative consequences. In a critical rationalist spirit, it argues that criticism of a proposal is criticism of its *consequences,* aimed at enhancing the rationality of decision-making in conditions of uncertainty and risk.

KEYWORDS: critical discourse analysis, critical rationalism, critical questions, decision-making, deliberation, dialectical profile, policy evaluation, practical argument, uncertainty and risk

Introduction
This paper develops the analytical framework for the evaluation of practical arguments in political discourse presented in Fairclough & Fairclough (2011, 2012), where a more systematic "argumentative turn" was advocated for the field of Critical Discourse Analysis (CDA). It develops a proposal for a set of critical questions aimed at evaluating decision-making in conditions of incomplete knowledge (uncertainty and risk). The questions are briefly illustrated with

examples from the public debate on austerity policies in the UK, following the first austerity Budget of June 2010 (Osborne 2010). For a more detailed analysis of the 2010 austerity debate, see Fairclough (2015).

Reasonable Decision-Making In Conditions Of Incomplete Information

Practical reasoning has been studied in informal logic and pragma-dialectics (Walton 2006, 2007a, 2007b; Walton, Reed & Macagno, 2008; Hitchcock 2002; Hitchcock, McBurney & Parsons, 2001; Garssen 2001, 2013; Ihnen Jory 2012) and sets of critical questions have been proposed for its evaluation. In what follows I will outline my own version of the critical questions for the evaluation of practical arguments, together with their theoretical underpinning, i.e. a critical rationalist view of the function of argument and of rational decision-making (Miller 1994, 2006, forthcoming). On this view, the function of argumentation is essentially *critical* and the best rational agents can do before adopting a practical or theoretical hypothesis is to subject it to an exhaustive critical investigation, using all the knowledge available to them. The decision to adopt a proposal A is reasonable if the hypothesis that A is the right course of action has been subjected to critical testing in light of all the knowledge available and has withstood all attempts to find critical objections against it. By critical objection I understand an overriding reason why the action should not be performed, i.e. a reason that has normative priority and thus cannot be overridden in the context. Essentially, criticism of a hypothesis is criticism of its *consequences*, not criticism of any premises on which it allegedly based. A critical rationalist view is anti-justificationist, and rationality is seen to reside in the *procedure* of critical testing; it is a *methodological* attitude.

Critical testing will necessarily draw on the knowledge or information that is available to the deliberating agents, and this is almost always limited. How should this knowledge be used if it is to enhance the rationality of decision-making? The critical rationalist answer is that knowledge should be used *critically*, in order to criticize and eliminate proposals, not inductively, i.e. not in order to seek confirmation of their (apparent) acceptability. Potential unacceptable consequences can constitute critical objections against doing A, unless critical discussion indicates that they should be overridden by other reasons.

Let us consider the case of risk first. If a definite prediction could be made that such-and-such unacceptable consequences will follow from doing A, this would provide an overriding reason why A should not be performed. But such definite

predictions about the future are hard to make. On a critical rationalist perspective, rational decision making in conditions of risk can be made, however, without relying on probability calculations, by following a "minimax strategy" which says: "try to avoid avoidable loss" (Miller forthcoming). This can be done by insuring in advance against possible loss (e.g. insuring one's property against various eventualities), or in the sense of making sure that there is some alternative route or some "Plan B" that one can switch to, should the original proposal start to unfold in an undesirable way, i.e. produce undesirable effects.

Unlike risk, which presupposes some calculation is possible, uncertainty does not involve *known* possible outcomes and frequencies of occurrence, derived from information about the past, but future developments which cannot be calculated. Incomplete knowledge manifests itself in this case not only as "known unknowns" but also as "unknown unknowns", and it is impossible to predict how the proposed action, as it begins to unfold, might interact with these. Economic policy, for example, involves primarily uncertainty rather than risk, as it unfolds against a background of unpredictable world events about which little if any calculation of probability can be made. The critical rationalist answer (Miller forthcoming) to the problem of uncertainty says that it is more reasonable to choose a proposal that has been tested and has survived criticism than one which has not been tested at all. In conditions of bounded rationality, a sub-optimal ("satisficing") solution that is *known* to work, if available, is preferable both to an extended quest for a maximally rational solution or to the adoption of an untested, new proposal, however promising that proposal may seem.

Critical Questions For The Evaluation Of Practical Arguments

In pragma-dialectics (van Eemeren 2010), dialectical profiles are normative constructs associated with particular argumentation schemes. They are systematic, comprehensive, economical and finite. In light of my methodological commitment to critical rationalism, according to which "rational decision making is not so much a matter of making the right decision, but one of making the decision right" (Miller 1994, p. 43; Miller 2006, pp. 119-124), critical testing of a proposal by means of an ordered and finite set of critical questions should aim to enhance the rationality of the decision-making *process*, not to produce the "most rational" decision (Fairclough & Fairclough 2012, pp. 49-50).

I start from the (presumptive) practical argument scheme originally defined by Walton (2006, 2007a), which I am re-expressing as argumentation from

circumstances, goals (underlain by values or some other normative source) and a means-goal relation (Fairclough & Fairclough 2012). This structure can be represented as follows:

The agent is in circumstances C.
The agent has a goal G.
(Goal G is generated by a particular normative source.)
Generally speaking, if an agent does A in C then G will be achieved.
Therefore, the Agent ought to do A.

A fundamental distinction is made by Walton (2007b) among three types of critical questions: questions that challenge the validity of the argument, questions that challenge the truth of the premises and questions that challenge the practical conclusion. Along these lines, I am suggesting that challenging the practical conclusion is the most important type of testing, as it is the only one that can falsify (rebut) the practical proposal itself. It can do so, I argue, by means of an argument from negative consequence, i.e. a counter-argument, or an argument in favour of *not* doing A:

If the Agent adopts proposal A, consequence C will follow.
Consequence C is unacceptable.
Therefore, the Agent ought not to adopt proposal A.

Practical reasoning is a causal argumentation scheme (van Eemeren and Grootendorst 2004): the proposed action A will presumably result in such-and-such effect. But actions have both intended and unintended effects, and the same effect can result from a multiplicity of causes. First, the unintended effects can be such that the action had better not be performed, even if the intended effect (goal) can be achieved by doing A. If this is the case, then a critical objection to A has been exposed and the hypothesis that the agent ought to do A has been refuted. Secondly, among the alternative causes (actions) leading to the same effect, some may be preferable to others. If this is the case, as long as the goal and unintended consequences are reasonable, there is no critical objection to doing A, but some comparison between alternative proposals is possible so as to choose the one which is better in the context.

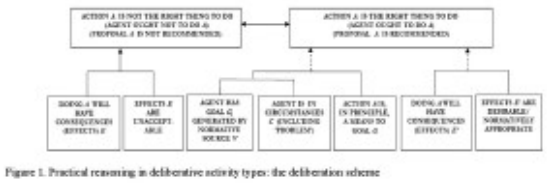


Figure 1. Practical reasoning in deliberative activity types: the deliberation scheme

In deliberative activity types, the argument from goals and circumstances and the argument from negative consequence are related, I suggest, in the following way (Figure 1): the argument from negative consequence (on the left) is testing the *practical conclusion* of the argument from goals and circumstance (centre) and can rebut that conclusion, if the undesirable consequence should constitute a critical, non-overridable objection against doing A.

If however the consequences are not unacceptable, then the agent may tentatively proceed with A, on the understanding that the proposal may still be rebutted at a later stage. The conclusion in favour of doing A can be thus strengthened by a presumptive argument from positive consequence (right-hand side). Saying that the effects are *not unacceptable* means that critical testing has not uncovered any critical objection to doing A: achieving the stated goals would (on balance) bring benefits, and the side effects would also be positive (on balance), as far as we can tell.

Deliberation is commonly said to involve a "weighing" of reasons, and the conclusion is said to be arrived at *on balance*. Against a context of facts that both enable and constrain action, and in conditions of uncertainty and risk (all of these being circumstantial premises), what is being weighed is the desirability of achieving the goals (and possibly other positive outcomes) against the undesirability of the negative consequences that might arise. Non-overridable reasons in the process of deliberation include any consequences that emerge on balance as unacceptable (e.g. unacceptable impacts on other agents' non-overridable goals), as well as unacceptable impacts on the *external* reasons for action that agents have in virtue of being part of the social institutional world, what Searle (2010) calls *deontic reasons* – commitments, obligations, laws, moral norms. As institutional facts, these are supposed to act as constraints on action; going against them (e.g. by making a proposal that goes against the law or

infringes some moral norm) is arguably unreasonable.

I suggest the following deliberative situation as a starting point: an Agent, having a stated goal G in a set of circumstances C, proposing a course of action A (or several, A_1, … A_n) that would presumably transform his current circumstances into the future state-of-affairs that would correspond to his goal G. Based on everything he knows, the agent is conjecturing that he ought to do A_1 (or A_2 or A_n) to achieve G. In order to decide rationally, the agent should subject each of these alternatives to critical testing, trying to expose potentially unacceptable negative consequences of each. If one or more reasonable proposals survive criticism, and are thus judged reasonable, the agent can then also test the arguments themselves, to determine whether any additional relevant fact in the particular context at issue is defeating the inference to the conclusion that he ought to do A_1 (A_2 … A_n) in that context.

What is being evaluated, therefore, is primarily the proposal itself (the practical conclusion), and the way to do this is by examining its (potential) consequences. If more than one reasonable proposals have been selected, the arguments on which these proposals claim to rest can be evaluated as well, in order to choose the proposal that seems to satisfy a range of relevant concerns comparatively better than the others. A particular view of human rationality can be said to go hand-in-hand with this dialectical profile, a conception of bounded rationality (Simon, 1955; Kahneman, 2011): agents are reasonable in adopting a satisfactory (or "satisficing") solution rather than in engaging in an extended quest for a "maximally rational", "optimal" one. The point of asking the sequence of questions in the profile is therefore not to narrow down a range of alternative proposals to the one and only "best" one, but primarily to eliminate the clearly unreasonable ones from a set of alternatives. Critical testing will therefore fall into three kinds (Figure 2):

(1) Testing the premises of the argument from goals and circumstances, as a preliminary step to assessing the reasonableness of a proposal that should be able to connect a set of current state-of-affairs to a future state-of-affairs. This is needed because the proposal may be reasonable in principle, i.e. without unacceptable consequences, but may have little or no connection to the context it is supposed to address, and may therefore not be a "solution" to the actual "problem".

(2) Testing the practical conclusion of the argument from goals, via a deductive argument from negative consequence. Applied recursively, this may lead to the rejection of one or more proposals and deliver one or more reasonable proposals for action (or none). The dialectical profile begins with the question aimed at the intended consequences of the proposal (here, CQ4).

(3) Testing the validity of the argument from goals, in order to choose one of the reasonable alternatives that have resulted from testing the practical conclusion; at this point, the critic will be looking at other relevant facts, besides those specified in the premises (e.g. other available means), that may indicate that doing A_n does not follow, thus suggesting that another reasonable alternative should be considered.

Challenging the rational acceptability ('truth') of the premises

(CQ1) Is it true that, in principle, doing $A_1 \ldots A_n$ can lead to G?
(CQ2) Is it true that the Agent is in circumstances C (as stated or presupposed)?
(CQ3) Is it true that the Agent actually has the stated/presupposed motives (goals and underlying normative sources)?

Challenging the reasonableness of the conclusion
(CQ4) Are the intended consequences of doing $A_1 \ldots A_n$ acceptable?
(CQ5) Are the foreseeable unintended consequences (i.e. risks) of doing $A_1 \ldots A_n$ acceptable? [If not, is there a Plan B, mitigation or insurance strategy in place that can make it reasonable to undertake $A_1 \ldots A_n$?]

Challenging the inference
(CQ6) [Among reasonable alternatives,] is A_n comparatively better in the context?

Figure 2. Critical questions for the evaluation of practical arguments

The critical questions (CQ) are summed up in Figure 2 and illustrated below:
CQ1 Is it true (rationally acceptable) that, in principle, doing A leads to G?

"Doing A leads to G" is a soft generalization that can be tested against all the information at the critic's disposal. There can be exceptions to it, which is why, as long as it is acceptable that in principle it is not impossible for the goal to be achieved by doing A, the critic can move on to the next questions. If it is not

acceptable that it is in principle possible to achieve G by doing A, then a new conjecture is needed: the agent should go back to the starting point and, in light of his stated goal G, he should figure out another possible means.

One line of attack against austerity policies in the UK has challenged the means-goal premise. The critics have challenged the government's belief in the possibility of achieving economic recovery by means of austerity. Bringing examples from the Great Depression and from Japan's history of stagnation, they argued that, *in general*, by killing demand, austerity invariably fails to deliver the goals. According to these critics, some other means has to be sought and tested.

CQ2 Is it true (rationally acceptable) that the Agent is in circumstances C?
This amounts to asking whether the stated (or presupposed) circumstances (including the "problem") are such as they are being represented. If the answer is negative, then the agent will be redirected to the starting point and will need to revise the description of the circumstances, then make a new conjecture about what action will resolve his problem. Critics of austerity have challenged the government's representation of the current situation in Britain (as an economy "in ruins", in a state of emergency similar to that of Greece) and its associated explanation. For example, they have denied that the crisis is one of excessive spending and the product of the Labour government's profligacy, insisting that it was the banking sector that caused the crisis.

CQ3 Is it true (rationally acceptable) that the agent is actually motivated by stated goals/ values/concerns?
Normally, it is taken for granted that this is the case. But sometimes arguments are *rationalizations*: the stated (overt) reasons are not the real reasons; there are other (covert) reasons driving the proposed action (Audi 2006). For example, critics of the government have challenged the government's alleged concern for "fairness", or have argued that austerity policies are in fact ideology-driven (Krugman 2010), and that the real goal is to "complete the demolition job on welfare states that was started in the 1980s" (Elliott 2010).

If either of these three questions yields negative answers, then the decision-making process is redirected to its starting point and will have to start again, with (a) a different means-goal premise; (b) a more accurate representation of what the situation/problem is, or (c) another overt goal or normative concern – one that is not in contradiction with the facts available to the critic. These three possible

loops back to the starting point are designed to ensure that, before the proposal itself is actually tested at the next stage, there has been adequate critical scrutiny of a number of assumptions: that the situation *is* as described, the goals and values *are* those that are overtly expressed, and the proposed means *is* at least in principle capable of delivering the goal**.** These first three questions do not yet aim to achieve a narrowing down of potential proposals.They cannot be ordered among themselves and are not part of the dialectical profile. *Assuming there is intersubjective agreement* on an affirmative answer to these three questions, critical testing of the proposal itself begins with CQ4.

The main stage in the critical testing process is the testing of the practical conclusion, i.e. the proposal to do A_1 (or A_2, … A_n), or the conjecture (hypothesis) that doing A_1 (or A_2, … A_n) is the right thing to do. This is done by examining the consequences of each proposal, based on all the information available. The following two questions, CQ4 and CQ5, should be asked for each conjecture A_1 … A_n, and failure to answer them satisfactorily may indicate that the proposal ought to be abandoned:
CQ4 Are the intended consequences of A (i.e. the stated goal) acceptable?
CQ5 Are the foreseeable unintended consequences of doing A acceptable?If not, is there an acceptable Plan B, or some other form of redressive action available?

CQ4 asks whether the stated goal (the intended consequence) is acceptable, and CQ5 asks whether the unintended consequences (should they occur) are acceptable, as far as they can be foreseen, based on all the facts at the critic's disposal. Ideally, "acceptability" is to be tested from all the relevant normative perspectives (e.g. rights, justice, consequences, other relevant concerns) and from the point of view of all the participants concerned. Not all relevant normative perspectives are equally important in each particular case, which is why a notion of ranking, of normative hierarchy is inherently involved at this point and the conclusion is typically arrived at "on balance", after a process of deliberation. The following question-answer possibilities seem to exist:
CQ4 Are the intended consequences of A (i.e. the stated goals) acceptable?
No, (based on everything we know) the intended consequences are unacceptable à Abandon A.

A negative answer means that there are critical objections to A. Abandoning A can mean either doing nothing (refraining from action) or can lead to renewed

deliberation about goals, i.e. going back to the starting point, so as to revise the goal and then make a new conjecture about what action will deliver this goal. The intended goal is unacceptable if, for example, it comes into conflict with other goals (of the agent or other relevant participants) or with deontic reasons that have normative priority (e.g. if the agent's goal comes into conflict with someone's else's rights, and the latter emerge as non-overridable from a process of critical discussion).

The answer to CQ4 can also be affirmative:
Yes, (based on everything we know) the resulting state-of-affairs will be acceptable à accept A provisionally and proceed to CQ5.

The answer "yes" to this question means that there are no overriding reasons why the goal should not be realized. The proposal can be accepted provisionally and questioning can move on.

The next question (CQ5) inquires about the proposal's potential unintended consequences. Proposals can be eliminated on account of unacceptable side effects if, based on all the facts or information available to the deliberating agents, it can be reasonably maintained, after a process of critical examination, that there is a risk that such-and-such effects may occur and that there is no way of handling that risk (see below) in a way that should enable the agent to proceed with doing A. If, based on all the information available, the answer to CQ5 is negative, then at least two possibilities exist:
No, based on everything we know, the unintended consequences are not acceptable à (a) abandon A, if unacceptable side effects constitute critical objections to doing A; (b) proceed with A tentatively, if there is a way of dealing with potentially unacceptable consequences, should they materialize.

Answer (a) means that there are objections against A that cannot be overridden, therefore the agent should abandon A, as it was originally conceived, go back to the starting point, choose a different conjecture and start the testing process all over again. For example, austerity policies have been deemed unacceptable because, even assuming the long-term stated goal to be acceptable, they were said to have unacceptable side effects, e.g. a dramatic reduction in employment possibilities for young people, or the risk of a "lost generation" (Blanchflower 2011).

Answer (b) means that the unintended consequences that might occur are in principle unacceptable but, in the context, they do not constitute critical objections to A. This could be for several reasons, all making implicit or explicit reference to a notion of strategy. For example, it could be that an effective way of dealing with the unintended consequences, should they actually arise, has been identified. There is, for example, a "Plan B" that the agent can switch over to at a later date (should emerging feedback be negative), which is why he can get on with doing A, assuming the negative consequences will not materialize (because, if they do, he will be able to change course). It is also possible that the agent is in some way "insured" against potential loss, so once again he can get on with the action and assume these losses will not happen. The agent can also get on with doing A if he can at the same time engage in a broader strategy of action, involving at least another parallel line of action, whose role is to mitigate the negative effects of doing A: while austerity creates unemployment, the government could simultaneously engage in a job-creation strategy for young people. It is also possible to reasonably persist in doing A in the face of emerging negative feedback if it can be reasonably argued that more time is needed before the intended consequences begin to appear (the situation "needs to get worse before getting better"). Finally, it is possible to answer CQ5 in the negative and, although no Plan B or other redressive action may exist, still decide to go ahead with A, thereby taking the risk of an unacceptable outcome. In such cases, although levels of "confidence" in a positive outcome (or in negligible levels of risk) may be high, there is a rationality deficit, and deciding to do A would be similar to a gamble.

The critics and defenders of austerity policies have exploited all these possibilities. Early in 2011, a fall in GDP for two consecutive quarters prompted the government's critics to call explicitly for the adoption of a "Plan B". The fact that the Chancellor was not willing to change course was taken as a failure of rationality, and as allegedly showing how power and vested interests were trumping the force of the better argument. It was also argued that the government's strategy was inadequate in not taking measures to mitigate the impact of austerity by sufficiently stimulating various alternative sectors that could provide employment and growth – green industries, infrastructure projects. In their defence, the government denied that the side effects constituted critical objections, insisted that more time was needed for austerity to bear fruit, pointed to measures put in place to mitigate the impact of austerity on the poor, stressed

the imperative of sticking to medium-term goals for the success of the overall strategy, and also claimed that the situation (the Labour "legacy") was more serious than had been anticipated, hence the need for a reinterpretation of what would, on balance, constitute acceptable and unacceptable consequences.

The answer to CQ5 can also be affirmative:
Yes, (based on everything we know) the unintended consequences are acceptable à accept A provisionally and move on to CQ6.

A positive answer to CQ5 means that critical discussion has not found any critical objections, so A can be accepted provisionally (subject to future rebuttal) and questioning can move on. By contrast, a negative answer will redirect the deliberating agents to an antecedent stage of the testing process: they will either have to make a new proposal or revise the current one so as to avoid the unacceptable consequences, and then test these again, or abandon the proposal completely and refrain from action. They can only reasonably proceed with a proposal that could have unacceptable negative consequences if there is an effective form of redressive action available, some effective insurance or a way of changing course, should the negative consequences actually materialize.

So far, CQ4 and CQ5 have tested the practical conclusion and may have indicated that doing A is unreasonable. It is possible that not only one but several alternative proposals have survived criticism at this stage. Is there a way of choosing among them in a particular situation? This is where looking at the argument itself will be useful. The attempt will be to think of *other* relevant facts in the particular situation at issue, in light of which it may not follow that the agent ought to do A. One fact that can defeat the inference is the existence of other "better" means of achieving the goal (CQ6).

CQ6 Among reasonable alternatives, is A comparatively better in the context?
This judgment will involve various evaluative perspectives. If, for example, efficiency or cost-benefit analysis are relevant perspectives for an agent, then, if there are more efficient alternatives than A, or if there are alternatives which offer more benefits or fewer costs than A, then it does not follow that the agent ought to do A. But neither does it follow that the agent ought not to do A, unless some critical objection can be uncovered in the form of some unacceptable intended or unintended consequence.

At this stage in the dialectical profile, the question is one of choosing, *among the reasonable alternatives* that have emerged from CQ4 and CQ5, the one course of action that best corresponds to a particular agent's *de facto* overriding concerns (value preferences). In the 2010 Emergency Budget, for example, Chancellor Osborne advocated a particular distribution of the financial consolidation: 80% of the savings were to come from spending cuts, while 20% from tax rises. It can be argued, even by defenders of austerity, that this ratio could have been slightly different, while still being reasonable from the government's point of view. In the context, however, the 80:20 split was justified by a *de facto* concern to increase Britain's attractiveness for business: it was a "better" alternative than other possible splits aimed at achieving the same total amount of savings.

If CQ4 and CQ5 can rebut the practical conclusion, CQ6 can defeat the inference from the premises to the conclusion. While failure to provide a satisfactory answer to CQ4 and CQ5 may indicate that the agent ought not to do A, failure to do so in the case of CQ6 will not indicate that the agent ought not to do A (i.e. that doing A is unreasonable, seeing as no unacceptable consequences have been revealed by either CQ4 or CQ5), but merely that the argument is defeated in the context, once one or more relevant premises are added to the premise set.

Conclusion

The most important questions in the set above (CQ4 and CQ6) are aimed at testing the practical conclusion by examining its consequences (thus trying to find critical objections against doing A). A practical argument is not evaluated only in terms of the instrumental adequacy of proposed means to pre-given goals. The goals themselves, as intended consequences of action, should be challenged and, if found unacceptable, the deliberative process should start again, with a new goal. Questions CQ4-CQ6 can achieve a progressive narrowing down of possibilities for action: proposals are tested in light of their consequences and eliminated if these consequences are on balance unacceptable; a principled choice amongs several reasonable proposals is also possible, in light of various contextually-relevant evaluative perspectives. The dialectical profile (CQ4-CQ6) I have suggested – as well as the wider set of questions (CQ1-CQ6) of which it is a part –integrate deliberation about means and deliberation about goals within a recursive procedure, which includes, at every stage, a loop back to the starting point or to some antecedent stage. A notion of *normative priority* enables the elimination of unreasonable alternatives (those that the agent *ought not* to

choose, i.e. those whose consequences would be on balance unacceptable), while a notion of *de facto priority* (based on contextual value preferences) can *subsequently* select one better alternative among a set of reasonable alternatives.

The deliberation scheme and its attached set of critical questions connect two argument schemes, showing how an argument from negative consequence is used in deliberative activity types to test the practical conclusion of an argument from goals and circumstances. It thus hopes to reflect more adequately decision-making as a process governed by bounded rationality. Critical testing is not, even ideally, aimed at discovering the "best" solution, but at "weeding out" the unreasonable solutions and thus narrowing down a set of options. Having done that, it may move on to identifying a subset of comparatively better solutions amongst those reasonable alternatives.

The profile also integrates considerations of uncertainty and risk. This makes it a more realistic picture of how people act. Agents are almost always willing to allow action to proceed even in conditions of uncertainty and risk. They will not necessarily discard a proposal that could have serious negative consequences but will try to tailor their action in such a way as to allow them to make piecemeal adjustments and revisions, should those potential unacceptable consequences materialize. Often, however, they will take the risk of acting even when no such possibilities of redressive action exist.

REFERENCES

Audi, R. (2006). *Practical Reasoning and Ethical Decision*. London: Routledge.

Blanchflower, D. (2011, February 17). The scars of a jobless generation, *New Statesman*. Retrieved from http://www.newstatesman.com/economy/2011/02/youth-unemployment-labour.

Eemeren, F.H., van & Grootendorst, R. (2004). *A Systematic Theory of Argumentation. The Pragma-Dialectical Approach*. Cambridge: Cambridge University Press.

Eemeren, F.H., van (2010). *Strategic Maneuvering in Argumentative Discourse*, Amsterdam: John Benjamins.

Elliott, L. (2010, June 14). The lunatics are back in charge of the economy and they want cuts, cuts, cuts. *The Guardian.* Retrieved from http://www.guardian.co.uk/business/2010/jun/14/lunatics-economy-cuts-frankin-roosevelt.

Fairclough, I. & Fairclough, N. (2011). Practical reasoning in political discourse:

the UK government's response to the economic crisis in the 2008 Pre-Budget Report. *Discourse & Society*, *22*(3), 243-268.
Fairclough, I. & Fairclough, N. (2012). *Political Discourse Analysis: A Method for Advanced Students*. London: Routledge.
Fairclough, I. & Fairclough, N. (2013). Argument, deliberation, dialectic and the nature of the political: A CDA perspective. *Political Studies Review*, *11*(3), 336-344.
Fairclough, I. (2015). Evaluating policy as argument: the public debate over the first UK austerity budget. *Critical Discourse Studies*, DOI: 10.1080/17405904.2015.1074595.
Garssen, B. (2001) Argument schemes, in F.H. van Eemeren (Ed.), *Crucial Concepts in Argumentation Theory* (pp. 81-100). Amsterdam: Amsterdam University Press.
Garssen, B. (2013). Strategic maneuvering in European parliamentary debate, *Journal of Argumentation in Context, 2*(1), 33-46.
Hitchcock, D. (2002). Pollock on practical reasoning, *Informal Logic*, *22*(3), 247-256.
Hitchcock, D., McBurney, P., & Parsons, S. (2001). A framework for deliberation dialogues. In H.V. Hansen, C.W Tindale, J.A. Blair, & R.H Johnson (Eds.), *Argument and Its Applications: Proceedings of the Fourth Biennial Conference of the Ontario Society for the Study of Argumentation (OSSA 2001).*
Ihnen Jory, C. (2012). *Pragmatic Argumentation in Law-making Debates: Instruments for the Analysis and Evaluation of Pragmatic Argumentation at the Second Reading of the British Parliament*, Amsterdam: Sic Sat.
Kahneman, D. (2011). *Thinking, Fast and Slow*. London: Penguin Books.
Krugman, P. (2010, October 21). British fashion victims. *The New York Times*. Retrieved from http://www.nytimes.com/2010/10/22/opinion/22krugman.html.
Miller, D. (1994). *Critical Rationalism: A Restatement and Defence*. Chicago: Open Court.
Miller, D. (2005). Do we reason when we think we reason, or do we think? *Learning for Democracy, 1*(3), 57-71.
Miller, D. (2006). *Out of Error*. Aldershot: Ashgate.
Miller, D. (forthcoming). Deductivist decision making, unpublished MS.
Osborne, G. (2010). 2010 Budget – Responsibility, freedom, fairness: a five year plan to re-build the economy. HM Treasury. Retrieved from http://webarchive.nationalarchives.gov.uk/20130129110402/http:/www.hm-treasury.gov.uk/2010_june_budget.htm.

Searle, J. R. (2010). *Making the Social World. The Structure of Human Civilization,* Oxford: Oxford University Press.
Simon, H. A. (1955). A behavioural model of rational choice, *Quarterly Journal of Economics*, *69*, 99-118.
Walton, D. (2006). *Fundamentals of Critical Argumentation*. New York: Cambridge University Press.
Walton, D. (2007a). *Media Argumentation*. New York: Cambridge University Press.
Walton, D. (2007b). Evaluating practical reasoning. *Synthese*, *157*, 197-240.
Walton, D., Reed, C. & Macagno, F. (2008). *Argumentation Schemes*. New York: Cambridge University Press.

ISSA Proceedings 2014 ~ The Possibility Of Visual Argumentation: A Point Of View

Abstract: The verbal and the visual are different complementary means for argumentation, and there is an uncontentious fact that visual argumentation exists. And, visual argumentation can learn much more from Frege's theory of meaning, which is helpful for the theorical basis or the philosophical ground of visual argumentation. Finally, some further far-reaching questions are brought forth, especially about the schemes of visual argumentation, and the relation of visual argumentation to artificial intelligence.

Keywords: artificial intelligence, philosophical ground, visual argumentation, the context principle, the scheme of visual argumentation

1. *Introduction*

The visual usually can convey much more meanings that cannot be expressed as

well through the verb. Then, can the visual express an argument or an argumentation?
For example, there is a picture (see Figure 1).

Figure 1

When you as an audience see the picture, what would you think? Perhaps there are at least three possibilities:
(1) you don't know about the related context, so you could not understand what on earth the picture wants to express;
(2) you don't know about its related context. You don't care about what it wants to express. You direct your attention at the eyes, the fingers, the color of the picture, and even the pencil, and so on;
(3) you know about the related context, so you could know this is a poster, which is the poster of Hope Project "Big Eyes Girl" in China, and it appeals to the people to donate.

Suppose you could know about the related contexts, and understand what the picture wants to express. Then, as an audience you could have different attitudes to what the poster expresses. For example, three kinds of attitudes are as follows

Approver A: Yes, I will and prefer to donate to the Hope Project.
Objector B: No, I will not donate to the Hope Project, because I am not very rich, and I myself also need donation.
Objector C: No, I will not donate to the Hope Project, because I don't believe its organizer. But I prefer to donate to the poor directly.

When the audiences begin their argumentations in their brains, the argumentations seem to take place. Here, some questions will be raised, which are too diversified for a paper, so I will talk some of them roughly:

(1) What are the challenges to the possibility of the concept of visual argumentation (VA for short)? This is about the realistic possibility of visual argumentation.
(2) Why VA is possible in the realm of argumentation? That is to say, how to make sense of the logical possibility of VA?
(3) How can the visuals express an argument or argumentation**[i]**? And some further questions raised by VA, for example, the schemes of visual argumentation, and the relation of VA to artificial intelligence (AI for short).

I agree with Birdsell and Groarke that the first step toward a theory of visual argument must be a better appreciation of both the possibility of visual meaning and the limits of verbal meaning. (Birdsell & Groarke, 1996) It is obvious that Birdsell & Groarke talk about this issue from pragmatics, not from semantics. I think this is a proper route for talking about this question. The following examples will illustrate three kinds of possibility of visual meaning.

2. *What can VA learn from Chinese traditional culture?*

2.1 *Three relevant examples*

The followed three examples are respectively from “The Book of Changes” in the Six Classics, poem and painting, and Buddism. “The Book of Changes” (pronounced Yijing in Chinese) is one of the oldest philosophical books in China. In fact, it is also a book of drawings, and its representative image is in Figure 2.

Figure 2

When you look at this picture at the first sight, what do you think about? Two parts, and eight hexagrams. The clarity is that the hexagrams are not only changing, but also changing regularly. The vagueness is that what on earth the hexagrams express. If you don't know the explanation about them, and you are difficult to know the meaning of them well and truly, then you cannot tell what they express. So, the clarity is that what the visual itself is. The vagueness is about what on earth the author wants to express.

In this case, we can not tell determinately what the drawing expresses. So, not every visual expresses an argument, just as not every sentence group expresses an argument. Perhaps in the cases like this, the visual can express some proposition, but not argument, because the author's purpose is not to argument something, but to explain something. Now we turn to the next example, which is the poem and painting. In china, there is a saying, no poem, no painting, and no painting, no poem. That is meaning though poem and painting are two different ways to express human's feelings/thoughts, they are the sameness at the level of logic. For example, the followed is a poem written by Su Shi, who was a famous poet in Song dynasty. This poem is well-known in China. The poem (see Figure 3) is translated as followed.

[Song dynasty] Su Shi:

From the side, a whole range; from the end, a single peak.
Far, near, high, low, no two parts alike.
Why can't I tell the true shape of Lu-shan?
Because I myself am in the mountain.

Written on the Wall at West Forest Temple

The meaning of this poem is what we saw is affected by the visual angle. Perhaps

someone will bring forth an objection-alike here: according to what this poem means, there seems to that, similarly, different audiences cannot have the same thing in their brains for the same visual. My reply is: in this kind of objection there is a difference neglected. What the author faced was a natural object, here is the mountain named Lu-shan. What the audiences face are man-made objects, for example, a drawing or a picture. The makers usually, although not always, try to express clearly what they want to express by the visuals.

If we must make a reason by analogy any way, the elicitation of the example is that the audience will have different visions if they see an object from different point of view; similarly, the audience will have different visions if they see a visual from different point of view, but vision / idea is different from thought**[ii]**. And, there is a fact that they can see the same thing, for example, it is a mountain or some parts of the same mountain or a visual or some parts of the same visual. The conclusion is: the audiences are affected by the point of view, and the audiences can see the same thing which I will expound in the second part; and, in essence, poem and the drawing is the same one, because they are the different representations of the same one, which is a kind of status. So, to some degree, the verbal and the visual is the same one, because they are the representations of the same one, which is also a kind of status. The visual is different from not only object, but also idea. The Visual is alike the verbal because both of them are the description of the being. The visual and the verbal are different complementary means for argumentation.

The third example talks about, according to Zen Buddhism, the reflection on the relation between the subject and the object. The great master in Zen Buddhism Qingyuan Xingsi in Tang dynasty said:

What you have seen, the mountain is the mountain, and the water is the water.
What you have seen, the mountain isn't the mountain, and the water isn't the water.
What you have seen, the mountain is still the mountain, and the water is still the water.

What the above said is there are three levels of outlook in Zen Buddhism: world with me, world without me (anatman), and world beyond me. The elicitation of "three levels of outlook" is that, at bottom, the understanding on the visual is limited and affected heavily by the understanding ability of the audiences. The

audience is an important factor that impacts the running of the argumentation. What visuals are is affected by many factors, such as the points of view, and the levels of outlook.

Here, perhaps an objection will be brought forth, that the visual is ambiguous regarding that the audience have different levels of outlook. My answer is: to some degree, this proves well that VA is possible. Argumentation is interpersonal form the surface form, but it is personal from the inner intention.

2.2 *Replies to some objections*
Along with the birth of VA, there are many objections surrounding it. Here at least two objections will be discussed as an opening.

Objection 1: If what we mean by "argument" is the act of advancing reasonable position in contexts of doubt and difference, then a picture cannot, independent of language, be an argument.

This objection focuses on whether the visual itself can express an argument, and the precedent condition is how to define the concept of argument. Just as there is no consensus on the definition of logic, there is also no consensus on the definition of argument. According to O'Keefe (O'Keefe, 1982), the concept of argument has two definitions. The concept of argument1 is described as involving "a linguistically explicable claim and one or more linguistically explicable reasons"; and the concept of argument2 is described as "overt disagreement… between interactants." It is obvious that the concept of argument1 is relatively strict, and the concept of argument2 is relatively broadened. About the scope of the concept "argument", although some scholars, for example, Perelman and Olbrechts-Tyteca (1969) and Blair (1996), think it should be strict; some scholars, for example, Willard (1989) and Hesse (1992), think it should be broadened. They think that the concept "argument" should be clarified from the point of interactive and argumentative communication. Visual arguments are a kind of enthymeme. Here, this opinion hides an important precondition which all discourse is productive of belief. (Hesse, 1992)

Van Eemeren, Grootendorst and Kruiger (1984) also argue that argumentation is necessarily verbal, and argumentation without the use of language is impossible. Toulmin, Rieke and Janik (1979) pointed out that "reasoning could not exist in the absence of language. Both claims and all the considerations used to support them

must be expressed by some kind of a linguistic symbol system." I think there is a fact worthy of noting, when these opinions were given, at that time there is no big data, so those scholars cannot realize the power of visual reasoning in virtue of the big data technology.

A systematic objection as Fleming argued (1996),
Argument is reasoning towards a debatable conclusion. It is a human act conducted in two parts (claim and support) and with awareness of two sides (the claim allows for and even invites opposition). By this definition, something which cannot be broken down into claim and support, and whose claim is not reliably contestable, is not an argument, whatever else it may be and how else it may participate in argument.

I don't deny the correctness of this opinion, but I must note that here is the concept of "argument", not the concept of "sentence group." As Woods and Walton (1982) said, an argument is a set of propositions that can be divided into two categories: premises and conclusion. The word used here in the definition is also proposition, not sentence. As to Fleming argues that a picture can not satisfy the two part structure of argument because "it lacks the internal linear arrangement that characterizes verbal discourse." (Fleming, 1996) For Fleming**[iii]**, the visual sometimes can serve as support for a linguistic claim, but it itself cannot, without language, be a claim.

For this objection, my question is that, can no any picture really be an argument? Can some pictures, with a certain inner connection and structure, be an argument? The answer from the experience is: VA exists. It is well known that propositions can be expressed in any number of ways, including by signs, signals, and visuals. Fleming didn't divide different visuals into valid and invalid. But the reality is that, according to the province of argument, visuals can be divided into valid and invalid as well as sentence group. So, we must distinguish the valid visual expressions from other visual expressions. How is a visual expression valid? A visual expression is valid, if and only if it can be judged as true or false. No doubt, for instance, this kind of visual expression exists in the province of legal evidences.

Objection 2: Visual expresses as a form of persuasion and rhetoric, not independently an argument.
According to Blair (1996), there is no doubt that images can be influential in

affecting attitudes and beliefs. Still, from the fact that images influence beliefs and attitudes it does not follow that such images are arguments, for there is any number of other ways of influencing attitudes and beliefs besides arguing. The concept of visual argument is an extension of rhetoric's paradigm into a new domain. If the persuasive function lies at the heart of rhetoric, then any form of persuasion, including visual persuasion, belongs within rhetoric's province.

I don't deny that visuals sometimes take its persuasive function, but I don't think the persuasive function is its one and only function. Just as the functions of the verbal, they include persuasion, argument, imperative, and etiquette. Argument is just one of the functions of the verbal. So, are the functions of the visual just one? No, it is not the truth. In the next place, to some degree, the difference between argument and persuasion is clear. The main difference between argument and persuasion is the purposes of them. The purpose of argument is to prove something is true, and the purpose of persuasion is to persuade the audience regardless of the truth value. According to the intention of certain agent, the visual can be used for both the truth value and persuasion. So, visual expresses not only as a form of persuasion and rhetoric, but also independently an argument. If we expect to find VA in such things as dramatic paintings and sculptures, magazine and other static advertisements, television commercials and political cartoons, (see Bair, 1996) we will be disappointed that there is hardly any qualified one, because most of these visual expresses indeed are not expressions with truth value.

Blair also talked about the importance of VA (1996), and he argues that if suggestiveness is the aim, this is a virtue; where clarity or precision are desiderata, it is a disadvantage. Blair's main point is that visual arguments are not distinct in essence from verbal arguments. The argument is always a proposition entity, merely expressed differently in the two cases. Therefore VA is not a particular exciting conceptual novelty; they do not constitute a radically different realm of argumentation. According to Bair (1996), the attempt of conceive of the possibility of non-propositional argument comes up empty, and the possibility of non-propositional persuasion is possible. Here, the precondition of Blair's claim is that the visual can not express propositions distinctly and precisely.

Here, once again, it deserved great notice that the verbal is a kind of means for arguments, then is the verbal is the only and all media instrument though

relatively it perhaps the most explicit form? I agree to Birdsell & Groarke (1996), vague and ambiguous are not the distinction between the visual and the verbal, and the visual meaning can be in some cases neither arbitrary nor indetermination; and both the visual and the verbal can convey claims and arguments. Blair mainly cited the concept of argument1 to analyze the concept of visual argument. What it would be like if citing the concept of argument2 to analyze the concept of visual argument?

3. *The philosophical ground of VA: sense and reference*

If VA is possible, why so many scholars argue it is impossible? At least, probably there is one reason is that a very important difference is confused or neglected: the language and what the language expresses. About this difference, the first system research is Gottlob Frege's works "*Über Sinn und Bedeutung*." (On sense and reference).

The fundamental thoughts of Frege's theory of meaning are three differences: the first difference is between language and what language expresses, the second one is between concept and object, and the third one is between sense and reference. According to Frege's context of scientific researches, natural language is often mixed with rhetoric, psychology and others, but what language expresses is the focus. Here our emphasis is the difference between sense and reference (see Figure 4).

Figure 4:

language		*sentence*	*proper name*	*concept word*
What language expresses?	*sense*	*thought*	*a part of the thought*	*a part of the though*
	reference	*truth-value*	*object*	*concept*

Figure 4

What can VA learn from Frege's theory of meaning? At any rate, VA itself keeps to some fundamental epistemological principles as followed: the context principle, the objectivity principle.

3.1 *The context principle*

The context principle is the central concept of the theory of VA. According to Frege, the context principle means that "never … ask for the meaning of a word in isolation, but only in the context of a proposition" (Frege [1884/1980] x). In the same way, never ask for the meaning of a picture in isolation, but only in the

context of where it occurs. If no knowing about the context of where a picture occurs, you have no knowing about the meaning of that picture.

Though in many instances in our culture the conditions of interpretation of visual expression are indeterminate to a much greater degree than is the case with verbal expression (see Blair, 1996), but many of them are determinate yet. It is undeniable that some of them are very complicated, even the meanings of some visual claims or arguments obviously depend on a complex set of relationships between a particular image/text and a given set of interpreters. “Context” can involve a wide range of cultural assumption, situational cues, time-sensitive information, and/or knowledge of a specific interlocutor. (Birdsell & Groarke, 1996) For instance, some ancient frescoes can be deciphered in line with their contexts and some relevant theories by the experts.

About the contents of the context, Birdsell & Groarke brought forth there are at least three kinds of contexts are important in the evaluation of visual arguments: immediate visual context, immediate verbal context, and visual culture**[iv]**. For the same visual in different contexts, it will perhaps have different meanings. For example, when Figure 2 is being seen by a person accustomed to Chinese culture, it will be associated with The Book of Changes and the law of changes. When it is being seen by a Korean person or certain persons accustomed to Korean culture, it will be easily associated with the national flag of Korean.

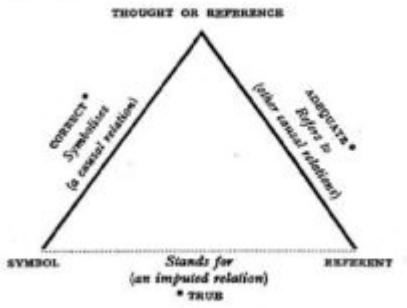
The contexts are the important hidden premises for a valid VA. They supply the basic premises for understanding it rationally, so they must be known by the audiences. The audiences who know about the contexts exclude the reasonable objections on the visual. Otherwise, the visual is obscure for the audiences, and as a result, VA fails to develop rationally. If necessary, providing keywords or sentences for a visual. That will be helpful for clearing up the misunderstandings in VA.

3.2 *The objectivity principle*

According to Frege, the difference between logic and psychology is distinct, but often confused by many mathematics and logicians. (see Frege [1884/1980]) He set up Begriffsschrift (a formalized language of pure thought modelled upon the language of arithmetic) to avoid the ambiguity of the natural language which involves a lot of psychological contents. Here, the objectivity principle refers to make a difference between language and what language expresses. If we present

the triple relationship between language and what language expresses and things, it can be find from Ogden Triangle of Reference (Ogden and Richards, 1923, p.11) (See Figure 5).

Figure 5:



In Ogden Triangle of Reference, what symbol is? Symbol is sign, which can be the verbal or the non-verbal. That does not deny that the visual, which is a non-verbal form, can be also the symbol. It can be said that the verbal and non-verbal has the same status and influence in Ogden Triangle of Reference.

There are also both thoughts and ideas in VA. We must pay attention to that difference between them. Our goal here is to distinguish between logical contents and psychological contents in VA. Just as the sentences in the meaning of language, according to Frege, the language there refers to the declarative sentences, not any form of sentences. So, here we must define the scope and domain of VA to the field of the visual involving the truth value. For example, the visual is some kind of evidence, such as in the fields of legal argumentation or natural science. Of course, that straint does not deny other functions of VA, such as persuasion, explanation and rhetoric.

What is the difference between image and visual? Here, visual is objective, referring to everything relating to or using sight, and able to be seen. Image is subjective here, referring to a visual representation (of an object or scene or person or abstraction) produced on a surface in the mind. Some scholars, for example, Fox (1994b, p. 70, 77), think that the image is the “ultimate tool” of nuance, intimation, hint, and suggestion, so that imagemakers focus on values, attitudes, feelings, and effects, caring little about logic, proof, and argument. Perhaps some images make such effect, but many of them make other functions, such as argumentative effect. This opinion also neglected the logical difference between image and visual. Alike verbal sentences, visuals are also the expression

of arguments, not the arguments themselves. The visual and what the visual expresses must be distinguished. This is a very important line.

Just as sentences have different types, drawings or pictures also have different types. Here, a drawing or a picture refers to the visual which has an explicit record of facts or objects, and has clear topic understood by the general audiences. I argue that, like an assertive sentence in language, any of such drawings or pictures has its sense and reference. A visual itself has a meaning, which can be a proposition, as a datum. And, what the visual expresses is another meaning, as a claim. Common contexts are the hidden premises. Subsequently, an argument is formed, and the reference of which is relevancy, sufficiency and acceptability. For example, in Figure 1, the argument is as followed: I need donation, because I want to go to school, but I am very poor. Different audience has different responses to its reference, and their responses can be drawn into different pictures. Consequently, a VA is formed.

Postman (1985, pp. 72-73) said, "The photograph itself makes no arguable propositions, makes no extended and unambiguous commentary." Can the verbal itself make any arguable proposition? No. The verbal and the visual are two kinds of tools for any arguable proposition. Just as hand sign is also a kind of tool for the communication of the human being. Is hand sign the verbal or the visual? I think it is rather the visual.

In addition, Birdsell & Groarke (1996) brought forth the question of representation and resemblance. They are very important in a VA, because they may construct the argumentative aspects. This is also the third prerequisite for a satisfactory account of VA**[v]**. Note that the discussion of this question implies that the objectivity of VA.

4. *Some futher far-reaching questions surrounding the feasibility of VA*

To take VA as a strand of argumentation theory, even provisional, will perhaps finally open a new lands for this world. As Birdsell & Groarke said (1996), "A decision to take the visual seriously has important implications for every strand of argumentation theory, for they all emphasize a verbal paradigm which sees arguments as collections of words." The fact is that, the paradigm is not unique, because arguments can be also as collections of visuals. About any type of informal logic theory, we will ask the possibility of its scheme, and its extensional application. VA is no exception.

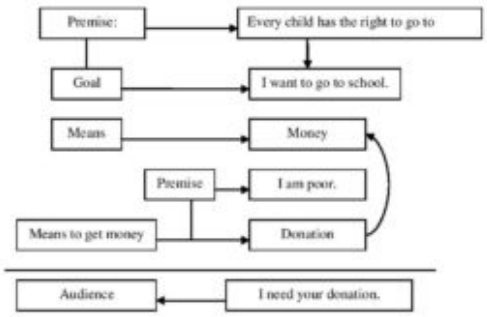


Figure 6

4.1 The schemes of VA

Are there any schemes to analyze a visual argument? Yes, the schemes of VA can be constructed, and the scheme will be helpful for analyzing, explaining, assessing, and reconstructing a visual argumentation.

For example, for the poster of Hope Project "Big Eyes Girl," its scheme of the argument is as followed**[vi]**.

In the above scheme, the major premise is from the context, which is a common sense: every child has right to go to school. The goal is from the visual itself, which can be told in the verbal or from what the picture expressed directly: I want to go to school. The means are also from the context: I need money to go to school because I have to buy pencils, exercises books, and so on. The minor premise also from what the picture expressed directly: I am poor and have no enough money to go to school. Finally, the conclusion is the result of the argument: I need your donation.

In addition, as to Figure 1, those three kinds of attitudes enumerated can be expressed by the pictures, and that is not only possible, but also feasible. For example, there are gesture language, silent movies, and children's picture story books without any verbal.

Up to now, we can construct a structure for VA, which should include three factors: the context, the interpersonal argument, and the reasonability. This structure for VA can be expressed as <C, I, R>. Any VA is a reasonability of an interpersonal argument in some certain context.

4.2 *The relation of VA to AI*

We are conditioned to reasoning and inference by virtue of the verbal, and don't realize the possibility of the visual. In essence, VA is a new epistemology, which can make reasoning by the visual, not by the verbal and the voice. Now that VA is

possible, can we inference in virtue of the consistency, and the coherence of the visual?

Perhaps one day just like what we saw in the American TV serial named “Person of Interest,” we can apply masterly the scheme of visual argumentation into AI, and consequently make the qualitative progress in the field of AI.

In the TV serial “Person of Interest,” A computer genius built the machine, which can identify automatically who is criminal suspect and who is not. The machine can reason validly only by the visual reasoning. Of course, there should consist of the process of analyzing, contrasting and assessing the visuals in the machine. Everyone is being watched by the cameras all around, and everyone has the unique social security number. A social security number will be given by the machine if the corresponding person has the performance disobey the attributes, such as the consistency and the coherence, of visual reasoning. For instance, in certain set of the TV serial, a female doctor works as a doctor in a hospital and drinks all the nights in a bar for several days on end. This is abnormal for anyone because a person needs fixed sleep unless some wrong with him/her. So the number of this female doctor is given by the machine, and the story of the play proofs the correctness of the machine.

An objection may be brought forth, that the machine is man-made, which means its procedure coding is also man-made that cannot be totally the visual. But this does not deny that the reasoning is a different type from the verbal one. The important issue here perhaps is not whether VA can be running completely independent of the verbal, just as the argumentations with the verbal sometimes cannot be run well without any supports, but its running makes sense to the development of AI. Although this TV serial is fictional, the visual reasoning is rooted in reality, and for example, we can find their traces in some legal reasoning and argumentations. Meanwhile, the question of dynamic visual is being solved by the rapid development of the dynamic cognitive science. So, VA could have important relations to AI.

Of course, the ethics of visual argumentation will be on the agenda. Should we hand over our analyzing abilities and decision-making power to the computer? This is another matter, and the precondition is that VA has soundness, adequacy and completeness.

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NOTES
i. In this paper, I don't deliberately distinguish the difference between visual argument and visual argumentation, because in general the visual can express an argumentation if it can express an argument.
ii. See the second part, which clarifies the difference between idea and thought.
iii. Fleming provided a long bibliography for the rejection of the possibility of VA
iv. Birdsell & Groarke has given an explicit explanation for these concepts. I don't think they are sufficient contents for the context of a visual argument, for example, sometimes the indirect cues deserve much more attention, but I agree those three aspects are the fundamental contents.
v. According to Birdsell & Groarke, the other two prerequisites for a satisfactory account of VA are: we must accept the possibility of visual meaning, and we must make more of an effort to consider images in context.
vi. I wish to thank Douglas Walton for the original version of this scheme. Responsibility for the scheme and the views expressed here are, of course, mine alone

References
Blair, J. Anthony. (1996). The Possibility and Actuality of Visual Arguments. *Argumentation and Advocacy,* Vol. 33, Issue 1, 23-39.
Birdsell, David S. & Groarke, Leo. (1996). The Possibility and Actuality of Visual Arguments. *Argumentation and Advocacy*, Vol. 33, Issue 1, 1-10.
Chryslee, Gail J., Foss, Sonja K., & Ranney, Arthur L. (1996). *The Construction of Claims in Visual Argumentation*. VCQ, Spring 1996.
Fleming, David. (1996). Can Pictures be Arguments? *Argumentation and Advocacy*, Vol. 33, Issue 1, 11-22.
Frege, Gottlob (1884/1980). *The Foundations of Arithmetic.* Trans. J. L. Austin. Second Revised Edition. Evanston, Illinois: Northwestern University Press.
Fox, R. F. (1994b). Where we live. In R. F. Fox (Ed.), *Images in language, media, and mind* (pp. 69-91). Urbana, IL: NCTE.

Hesse, D. D. (1992). Aristotle's Poetics and Rhetoric: Narrative as Rhetoric's Fourth Mode. In R. Andrews (Ed.), *Rebirth of Rhetoric: Essays in Language, Culture and Education* (pp. 19-38). London: Routledge.
Ogden, C. K., & Richards, I. A. (1923). *The Meaning of Meaning: A Study of the Influence of Language upon Thought and of the Science of Symbolism.* New York: Harcourt , Brace & World, Inc.
O'Keefe, D. J. (1982). The Concepts of Argument and Arguing. In J. R. Cox and C. A. Willard (Eds.), *Advances in argumentation theory and research* (pp. 3-23). Carbondale, IL: Southern Illinois University Press.
Postman, N. (1985). *Amusing ourselves to death: Public discourse in the age of show business*. New York: Penguin.
Toulmin, S., Rieke, R., & Janik, A. (1979). *An Introduction to Reasoning*. New York: Macmillan.
Willard, C. A. (1989). *A Theory of Argumentation*. Tuscaloosa, AL: University of Alabama Press.