

ISSA Proceedings 2014 - Self-Argumentative Words: The Case Of Nature And Natural

Abstract: The words *nature* and *natural* operate in a specific way while used in an argumentation. Observation confirms that these words are never used with a negative argumentative orientation. This functioning will be illustrated on a corpus of sequences of public debate about same sex marriage. The hypothesis according to which this fact is due to the intrinsic semantic properties of these words will be examined.

Keywords: *nature* / *natural*, point of view, semantics, argumentative potential

1. Introduction

Several words seem to be arguments in themselves: the choice of those words tend to determine a statement's argumentative potential. This idea, far from being new, has been sustained for a long time by various branches of *Argumentation Within Language*, a semantic theory developed by the French scholars Ducrot and Anscombre (1983). Its basic thesis consists in the claim that any sentence in any language can be used as an argument for some (but not any!) conclusion (Racah, 2002). Consequently, this argumentational potentiality ought to be taken into account while semantic descriptions of sentences, and their components, are carried out. This potentiality can be described after shrewd observation of language use and a generalization of the observations results. That also means that observation of language use, in this framework, is not a purpose but a way towards abstraction.

It will be shown that in a debate, *nature* or *natural* are of the kind of words that influence consistently the outcome of an argument. Through the analysis of sequences of public debate on topics such as, for example, same sex marriage, we can observe that the inherent argumentative power of these words is independent of their relevance to reality and, in some cases, prevail over the argumentative power of ideas.

Incidentally, a few theoretical issues will be addressed, among which the instability of words intrinsic value judgments through language evolution, and the

relevance of the traditional distinction between connotation and denotation. Indeed, an examination of the words used in this study illustrates the position that, in at least some cases, properties that are usually relegated to the space of connotation are objectively describable semantic instructions, while denotation could only be described in vague terms.

2. *Words as arguments*

It is commonly admitted that the possible conclusions of argumentations are determined by several situational or contextual factors, but also restricted by their linguistic components. For example, any sentence containing the word but follows the same argumentative structure[i]. Many other examples could be listed of this kind of structural constraints triggered by connectives or operators.

It has been shown in Bruxelles & al. (1995) that some simple sentences (i.e. sentences without connectives or operators) can also be used in argumentations in a restricted way. This fact is due to the presence of words that crystallize widespread ideas in the language. Thus, said in a schematic way, peoples' ideas affect languages and languages affect peoples' ideas... This matter is abundantly discussed in Ducrot's and his followers' works, especially in those that deal with the Theory of Topoi. It is not the aim of this paper to repeat those demonstrations. However, the analysis of the words *nature* and *natural* and of their argumentative behaviour in the selected discourse sequences will illustrate and fully corroborate these findings.

2.1. *Examples*

The following examples have been selected with the aim of giving an insight of the way speakers use the words *nature* and *natural* in actual argumentations. This is a token corpus[ii], picked out from English speaking web articles, and their comments, about same sex marriage. The close context of the words under study is highlighted. There are arguments of both pro-gay-marriage and anti-gay-marriage.

(1)

If you plant a tomato seed, or a human seed and nourish them, they will grow naturally to bear fruit in the form of luscious tomatoes or a beautiful child. That's nature at work. If you destroy the tomato and the human seeds in their gestation period, you violate Natural Law. If you condone and allow the marriage of two homosexuals, that's also a *violation of natural law*.

http://www.pennlive.com/opinion/index.ssf/2013/09/same-sex_marriage_violates_natural_law_as_i_see_it.html

Comments of Internet users on (1):

(1.1)

I think it would be considered more “*natural*” to be with the person you fell in love with, rather than choosing a partner someone else told you to be with. Should my wife and I utilize any particular position in bed, or should we wait until you approve it first?

(1.2)

I was unaware that tomato plants marry. Also, if humans intervene in the natural activity of something, it is not really breaking a “law” any more than, say, a lion interrupting zebras mid-coitus to eat one of them. Zebras and lions also do not marry. They gravitate together in a family unit, true, but humans are the only species that require someone else to approve and bless their “natural” union. You might say that “marriage” is a violation of natural law because man is interfering with the natural act of reproduction. How, then, is a church’s mandate against pre-marital sex any different than your assertion that stomping down a tomato’s right to reproduce is a violation of “natural law”? *If you are a proponent of “natural” law* then I suggest abolishing marriage as it limits what a man and woman can do with their sexual drives and relationships. Marriage is not a “natural” condition but a social contract developed by people to regulate who has sex, when, and why. You can make it whatever you want it to be. Be fruitful and multiply. Some marry without the desire or ability to bring children into the world. Is that interpretation of the word “unnatural”?

(1.3)

He should have noted that he supports *Christian Natural Law* as opposed to the classical liberal believe of natural law as put forth by thinkers such as Cicero and Rothbard. *Natural law simply states that through our creation we are born free and that our actions should not interfere with the freedom of others.* Homosexuals who wish to marry do not interfere with the actions of anyone and cause no harm to anyone except the perceived harm inflicted on Gerard and his ilk. Under the belief that because homosexuals cannot produce offspring as a direct result of their union sets a dangerous precedent. There are numerous traditional unions of heterosexuals that cannot or will not produce offspring. Are you to say now that

barren couple of child bearing age or couples past their child bearing age should not marry?

(1.4)

Just because one's own religious texts mislabel the diction concerning effeminate men as spunk pockets (the texts that say "homosexuality" is referring to debasing weaker men sexually, not entering into a whole, meaningful, lifelong relationship), doesn't make it against *natural law*, especially considering that *natural law actually has a rather set place for homosexual unions in all species*.

(2)

Much of the anti-gay-marriage argument rests on two commonly held assumptions: Life-long exclusive mate-bonding for purposes of rearing joint offspring is natural, and homosexuality is unnatural. Both assumptions have little basis in fact. Homosexual acts have, in fact, now been widely documented across a range of mammal species (that's right - we're 'outing' mammals!), including our closest relatives, apes and monkeys. [...] Meanwhile, there seems to be *nothing particularly 'natural' about marriage*. Only about 3% of mammal species are monogamous - meaning they cohabitate - and few of these species mate for life. And nearly each partner in these 'animal marriages' engage in extra-pair mating. Lifelong sexual loyalty in nature is, it turns out, a vanishingly rare commodity.
http://www.huffingtonpost.com/paul-j-zak/gay-marriage-is-natural_b_112256.html

(3)

Natural law's most elementary precept is that "good is to be done and pursued, and evil is to be avoided." By his natural reason, man can perceive what is morally good or bad for him. Thus, he can know the end or purpose of each of his acts and how it is morally wrong to transform the means that help him accomplish an act into the act's purpose. Any situation which institutionalizes the circumvention of the purpose of the sexual act *violates natural law* and the objective norm of morality. Being rooted in human nature, *natural law is universal and immutable*. It applies to the entire human race, equally. It commands and forbids consistently, everywhere and always.

<http://www.tfpstudentaction.org/politically-incorrect/homosexuality/10-reasons-why-homosexual-marriage-is-harmful-and-must-be-opposed.html>

(4)

Is gay marriage also contrary to natural law? Many argue that it is, but there's no

obvious reason to think so. The Vatican states that “marriage exists solely between a man and a woman”, but even a cursory look at the history of marriage reveals that that isn’t always the case. Marriages with multiple partners, for example, have been very common and same-sex unions have existed in one form or another in many cultures. Catholic teaching also says that the natural purpose of marriage and sex is procreation; thus, any union or sexual act where procreation isn’t theoretically possible *isn’t in accordance with natural law and is intrinsically immoral*. Curiously, only gay marriages are typically cited as examples of “naturally sterile” unions. Are they the only sort that exists? Of course not – but they are the only sort the Catholic Church wants banned by law. Unfortunately for the Vatican, however, most people today no longer consider procreation the necessary and intrinsic purpose of either sex or marriage.

<http://atheism.about.com/od/gaymarriage/a/GaysUnnatural.htm>

(5)

Comment of an Internet user on

<http://guardianlv.com/2014/03/same-sex-marriage-ban-violates-natural-law/>

The natural law is what is in keeping with biology. *Same sex revulsion is natural, cause it is a species survival instinct.*

(6)

Marriage in general is unnatural. A romantic union recognised in law and based in a traditional ceremony isn’t something non-humans have much time for. A lion does not fill out extensive legal documents whenever he mates with a lioness [...].

<http://www.theguardian.com/science/brain-flapping/2013/may/29/scientific-reasons-oppose-gay-marriage>

Comments of Internet users on (6):

(6.1)

The article argues against the point that same-sex sexual interaction is unnatural by claiming that animals don’t have marriage ceremonies. The author could have pointed out that some animals accidentally engage in same-sex interaction, but instead makes the pointless comment that animals don’t have marriage ceremonies. *That’s like saying all deaths are natural because animals don’t have funerals.*

(6.2)

[...] when one looks at the laws of nature there is not a gay couple on the face of the earth that can reproduce between themselves. This by itself should tell us that a gay marriage and a heterosexual marriage are not equal.

(6.3)

Marriage is a natural mating habit for humans of opposite sexes and has been for millennia. It is also an expression of their reason which distinguishes them from animals. End of science lesson.

(6.4)

It's funny how they make a conclusion that homosexuality (*sic!*) in humans is natural based on some examples from animal world. I know about some frogs and fish which can change their sex in absence of the opposite sex. Can humans do the same (without any surgeries, etc.)? So how applicable are those comparisons to frogs, birds, and other creatures? It's just ridiculous.

3. *The conception of instructional semantics*

Argumentation Within Language and the *Semantics of Points of View*, a theoretical model arose from the latter, which is the framework of this paper, belong to the so-called *instructional* branch of semantics. This type of semantics aims at describing the *modus operandi* of linguistic units, thus, the instructions that words (or linguistic structures) supply to their own interpretation. In order to understand the conception of semantics of this approach, an important conceptual distinction between sense and (word) meaning needs to be clarified.

According to this branch of semantics, *sense* concerns *utterances*; hence it is *variable* (with respect to language units), depending on the situation of utterance and other extra-linguistic elements. It is *subjective*. *Meaning (or sentence meaning)* concerns linguistic units, is stable in every situation of utterance and, therefore, is *objectively describable*.

The understanding of an utterance implies a process of interpretation. According to Racciah (2005, pp. 208-210, 2006, pp. 125,130,), the sense of an utterance is not transmitted from the speaker to the hearer but *constructed* by the hearer, by means of linguistic and extra-linguistic elements. These different inputs to the construction of sense work as *instructions*: each of them demarcates more or less precisely the ways one can, or cannot understand the utterance (if there were no such constraints, there would not be any possibility of understanding each other).

Extra-linguistic instruction can be difficult, sometimes even impossible to objectivize, while linguistic instructions – the ones that interest us – constrain the construction of sense in a systematic manner. The latter constitute *sentence meaning*, and is the object of *semantics* as a discipline.

3.1 *Lexicalized points of view*

With regard to the crystallized ideas in language, the Semantics of Points of View maintains that widespread ideologies, value judgements, etc (called in a more neutral way *points of view*) can be carried by words. These points of view become stable semantic instructions, thus, they are part of the *meaning* of these word. According to Raccah,

The points of view carried by words, which combine the yield to the argumentation of utterances are *implicit*: they are not the object of the discourse, but are necessary to accept (perhaps very provisionally) in order to *understand* the utterance. (Raccah, 2011, p. 1600).

The most simple of these points of view are the positive or negative value judgements. The words that carry these points of view are called *euphorical* (for the positive judgements) or *dysphorical* words (for the negative judgements). The positive (respectively negative) points of view that these words trigger are part of their *meaning*. Thus, they are independent of the situations of utterance. This is the case of words like *beautiful, honest, improve... / horror, spoil, ugly...* An important consequence of the stability of these points of view is that euphorical words cannot be used negatively, and dysphorical words cannot be used positively in argumentations (unless in specifically marked discourses).

3.2. *Nature / natural: euphorical words?*

The hypothesis according to which *nature* and *natural* belong to the euphorical category[iii] is likely to explain the above observed phenomenon. In fact, if these words cannot be used negatively in argumentations because their semantic properties do not allow it, it is not surprising that both sides in the debate appropriate the “nature”-argument. It is a simple explanation but it has to be examined and tested before we accept it.

First of all, we have to determine if *nature* and *natural* are euphorical words. Yet, at first sight, they seem to be absolutely neutral, neither positive, nor negative. The hypothesis has to be tested: if it is possible to use these words in a negative

way in an argumentation, the hypothesis falls naturally. One single example is sufficient to illustrate the difficulty in using them negatively:

*Ex. * This juice is natural but it is really tasty.*

The oddness of this utterance indicates that a semantic constraint proscribes such an argumentative orientation. Many other examples can be found or invented, but this oddness remains in all cases. As it has been already said, the euphorical (or dysphorical) character of the words does not completely prevent the negative (or positive) argumentations: anything is *possible* in specifically marked discourses (literature, irony, etc). But if so, the oddness of this kind of argumentation is part of the effect of these discourses. So, unless the contrary is proved, we can consider that nature and natural belong to the category of euphorical words. One could object that the fact that the “nature”-argument is used positively is not necessarily bound to the semantic properties of these words but simply to the commonly accepted idea that “natural is good”. Indeed, the commonly accepted idea is definitely the origin of its crystallization in the English language. But it could not explain the systematic character of the positive use of this argument. Every reasonable person knows that not everything that is natural is good. Firstly, philosophers have since long time acquired the painful conviction that there is no possible definition to the concept of nature. And yet, the “natural” argument is ubiquitous in food or cosmetics marketing... and it works. Moreover, we know that diseases and death are natural, too; but the “natural”-argument still remains positive. If we say in an argumentation that death is a natural thing, we do it, for example, in order to relieve the pain a person could feel, facing someone’s death.

In summary, the euphorical character of the words nature and natural is more likely to explain the argumentative performance of the utterances containing them than the supposition that people actually think that natural things are always better than others.

4. Two additional objections of principle

One can easily observe that the positive point of view conveyed by the words nature and natural is rather a recent phenomenon in history. Indeed, the idealization of nature has progressively come along with the evolution of civilization and languages (not only English) have crystallize this ideology. Which leads us to a first possible objection of principle: this fact seems to be contradictory with the above asserted stability of lexicalized points of view. To

answer this objection, it has to be clarified that the stability concerns the situations of utterance *at a given moment*. No stability in language history is claimed. On the contrary, it is interesting to observe that words can carry a specific point of view at a moment in time, and may lose them at some other moment. This fact makes pointless the efforts people can deploy to justify an actual use of a word by its etymology (for example: to pretend that calling someone a *Negro* is not insulting because this word means originally *black*...).

A second objection of principle has to be briefly examined. The introduction of the terms point of view, *euphorical* / *dysphorical* words may seem to be redundant, given the existence of the concept of *connotation*, which refers to the same kind of phenomenon. Simonffy (2010, pp. 308-310) carries out a detailed comparison between lexicalized points of view and connotation. The main difference is that connotation is seen as *secondary* to denotation, while the different branches of Argumentation Within Language have always claimed the opposite of this assertion. Ducrot's early works (1972, 1980...) contain efficient demonstrations of the primacy of argumentative values over informative ones. Lexicalized points of view, as we have seen, belong to the realm of argumentation and are not considered to be secondary to denotation.

5. Conclusion

This short study has aimed at showing how linguistic units can constitute constraints in actual argumentations. We could observe that, in a debate, both sides are likely to be "trapped" by words that impose a specific point of view. Falling in this linguistic trap is not inevitable. Even if it is not possible (and maybe not even necessary) to use *nature* or *natural* in a negative way, it is possible to get round the problem by contesting the general relevance of the "nature"-argument. To be fair to the participants of the public debate about same sex marriage, let us cite a few who did so:

(7)

Ultimately, the "homosexuality is unnatural" argument fails to support the case against same-sex marriage because there is no clear and convincing content to the concept of "unnatural" in the first place. Everything that is claimed to be "unnatural" is either arguably very natural, arguably irrelevant to what the laws should be, or is simply immaterial to what should be treated as moral and immoral. It's no coincidence that what is "unnatural" also happens to be condemned by the speaker's religious or cultural traditions. Just because some

trait or activity isn't the norm among *humans doesn't make it "unnatural" and therefore wrong.*

<http://atheism.about.com/od/gaymarriage/a/GaysUnnatural.htm>

(8)

The nice thing about natural law is that it doesn't appeal to sectarian or confessional doctrine to justify its conclusions but on what is determined through the use of "reason" to be "natural" to human beings as rational animals – though it *often requires belief in a divine creator as the source of natural law*. Principles or goods derived from natural law can be things as basic as the duty of self-preservation or the care of children. What it isn't, however, is looking at nature for examples of "good behaviour" – for example, monogamous pairing among bird species is not a natural law argument – or at least not a good one – for monogamous marriage among human beings. You can always find a counter-example in nature; same-sex sexual behavior, for example, is commonly observed among animals.

<http://www.uscatholic.org/blog/201212/birds-and-bees-natural-law-and-same-sex-civil-marriage-26711>

(9)

The first issue is the massive amount of ground that the naturalness argument concedes to the opponents of gay rights. It is understandable to want to rebut the 'being gay isn't natural' argument, but the way many gay-rights campaigners have chosen to do so commits the exact same error as their opponents: the mistaken idea that morality has anything to do with what's natural. Change the subject of the opening quote above to, say, cannibalism, and the idea that we should look to nature and animals as a guide to what humans should be doing becomes obviously absurd. *Being gay's unnatural? So what?*

http://www.spiked-online.com/newsite/article/just_how_natural_is_homosexuality/13918#.U6_-UZR_vTp

The Semantics of Points of View supplies theoretical tools to the description of the semantic constraints that linguistic units trigger (cf. the concept of *lexical topical field*, Raccah 1990, Bruxelles & al. 1995). As discourse analysis has to deal with the linguistic elements that form texts and discourses, these tools can be used by discourse analysts. This lead has been explored several times, among others in Chmelik (2007), Várkonyi (2012).

NOTES

i. (i) [...] the presence of but in a sentence requires that its utterances present the argumentative orientations of the utterances of the two halves of the sentence as opposed [...].

(ii) [...] the presence of but in a sentence produces the effect that its utterances are presented as arguments for the same conclusion as utterances of the second half of the sentence would be arguments for.

(iii) The presence of but in a sentence does not require an absolute choice of a particular argumentative orientation, nor does it produce any effect in this sense. (Raccah, 1990)

ii. The corpus is not the object, in the sense it could be the object of a sociolinguistic study or one of discourse analysis, but an illustration. Therefore, it has not been relevant to restrict their origin to a specific geographic area, or a particular period.

iii. Unless they are used as technical terms, as terms are supposed to be free from value judgements.

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ISSA Proceedings 2014 - A Cognitive Style Parameter Of Argumentation

Abstract: A cognitive style is viewed as individual traits in argumentation organization and processing. A parameter of CS is cognitive complexity (CC) / simplicity (CS). We studied how 200 Russian respondents used Toulmin functions in reconstructed argumentation of an education article. Claims given by both style groups were mostly of policy and evaluative. Evidence (Data) did not differ significantly. Warrants mostly had grouping semantics in both CC and CS. Backings and Reservations (Rebuttals) were more actively used by CC-respondents, Quantifiers – by CS-respondents.

Keywords: argument components, argument interpretation, cognitive style, poles of a cognitive style, cognitive complexity, cognitive simplicity, functional semantics, the Toulmin Model

1. Introduction

People's communicative activities are interpretative. In our perception of situations we often distort the initial state of affairs. According to psychological research such distortions are neither intentional nor accidental. They are based on personal peculiarities of people. The cognitive style approach is one of possible

approaches that help operationalize such peculiarities in people.

According to psychological research cognitive style is an individual-specific mode of processing information about the environment manifested in peculiarities of perception, analysis, structuring, categorization and evaluation of a situation.

Depending on starting points of analysis, psychologists single out a number of independent dimensions that characterize individual features in processing information. Each of these dimensions have opposing sides (poles). They are: field dependence / independence; flexible / rigid cognitive control; tolerance / intolerance to non-realistic experience; focusing / scanning control; concrete / abstract conceptualization; cognitive complexity / cognitive simplicity. These features gave names to cognitive styles.

The cognitive style approach views a person in various types of activities, and the characterization of the person is linear.

What do these linear criteria mean? Their significance lies in opening a new road towards studying the intellectual actions of an arguing person. Earlier, it used to be a uni-polar psychological dimension of discourse activity. Respectively, the criteria were level-based, i.e. based on the principle 'high-rate VS low-rate'. Now the dimension becomes bi-polar with a typological criterion, i.e. belonging of a person to one or the other type of one and the same dimension. Also, the scheme of diagnostic analysis itself was changed. Earlier, an individual result was evaluated on the basis of its comparison with the norm. Now, there notion of norm is not used anymore, which means that no side of the same cognitive style is viewed as 'good' or 'bad' [Kholodnaya 2004].

2. Cognitive style principles for argument analysis

To generate an argument, a person should comprehend, interpret, and evaluate a situation with debatable ideas. How do we do it? We do it on the basis of our subjective experience. Not only the situation, but also our experience has a specific organization which needs to be considered.

According to G. Kelly (1955), our personal experience can be represented as a system of personal constructs. A construct is a bi-polar scale, and it is person-specific. The scale has two principal functions: establishing similarity and detecting difference. These two functions manifest themselves when we evaluate people and things.

Constructs are not isolated phenomena, they are systematic, i.e. inter-related and inter-dependent. So, when we study argument activities, we are to remember that these activities are not identical – they depend on the arguing individuals. Argument is to a large extent an evaluative activity, and, as we all know, the evaluation differs from individual to individual. Still, such individuality can be systematized if we choose to view individuals as belonging to a group – for example, to one or the other pole of one and the same cognitive style. To study argument organization based on psychological principles we have chosen one cognitive style parameter – cognitive complexity / cognitive simplicity.

We can establish how complex or how simple our argumentative evaluative space is. To do that, we take into account the degree of differentiation and the degree of integrity of a particular construct system.

According to J. Biery (1955), cognitive differentiation is an ability to construct social environment (in our case, argumentative process). Such construction is made on the basis of a number of distinct parameters. Cognitively complex individuals have strongly-differentiated cognitive structures, while cognitively simple people have weakly-differentiated cognitive structures.

Operationally, the degree of differentiation is measured by means of the so-called factorial analysis. A factor is, simply speaking, a single unit of measurement. The less inter-connected isolated constructs are, the more measurements, or factors, can be singled out in the procedure of factorization of a construct matrix – so, the more differentiated system of constructs we find in a given person; in other words, the more cognitively complex the person is.

Actually, quantity of factors is not a decisive criterion. It is only one of important criteria of cognitive complexity of a person. Applied to our field, it is not only important how many elementary arguments are given for supporting a standpoint. No less important is if they are organized in cluster-arguments or not. Also important is how complex those cluster-arguments are. I state that the more cluster-arguments for a standpoint are given in a written argument, the more cognitively-complex a person is.

On the other hand, functional semantics of arguments can give innovative data for cognitively complexity / cognitively simplicity. By functions I here mean the roles of argument components described by S. Toulmin (1958) and later elaborated by

a number of argumentologists (cf. Ehninger 1974; Ehninger, Brockriede 1963, 1978; Crable 1976).

For example, we detect preferences in using certain functions, Y-functions by cognitively complex people, and Z-functions by cognitively simple individuals. Out of that, if we have sufficient statistics, we can make predictions that in the same type of argument situations, cognitively complex people will be likely to use Y-functions, while cognitively simple – Z-functions. So, knowing that, we can analyze the arguments and we can easily detect what kind of person has written it – a cognitively complex, or a cognitively simple one. What is important here is diagnostics itself: we can reveal the cognitive type of the author of an argument without using complicated psychological experiments. Moreover, the experiments, like Kelly's grid, are made in the presence of live people. We, on the other hand, can detect the cognitive type of the author of written arguments with no physical presence of the former. In other words, we can speak about an innovative approach to argumentative expertise.

It is interesting for analytical purposes, but not only. For example, some cognitively complex students are known to prefer to hide their aggressiveness and use manipulative forms of communication. If we detect cognitively complex people by analyzing their arguments, we can be ready to confront or predict possible manipulation on their side in further communication with them.

3. Cognitive complexity/cognitive simplicity revealed in arguments: results of the experiment

Based on research done by Y. Besedina (2011) and myself, the following can be formulated.

3a. Experiment details and methods used.

Processing (subordinate) purpose: to get (a) cognitive style attribution to 200 Tsiolkovsky Kaluga State University students (both sexes, age of 17-23); (b) their interpretation (responsive discourse) of a Russian language argumentative text on secondary school exams.

Ultimate (primary) purpose: comparison of using arguments by the persons of the opposing poles of the 'Cognitive Complexity / Cognitive Simplicity' style.

Stage 1. Respondents' cognitive style identification.

G.A. Kelly's personal constructs method of repertoire grids was used to reveal the

respondent cognitive style; completed grids were processed by the IDIOGRID program for quantitative and qualitative analysis of the resulting constructs. Diagnostic Indices taken into account were: (a) the degree of differentiability (the 'matching score' parameter (Bieri 1955); (b) the degree of integrity (the 'intensity' parameter (Fransella and Bannister 1967)).

Results for Stage-1: division of the respondents into Cognitively Complex persons (37%, or 74 people), Cognitively Simple persons (55%, or 110 people), and Mixed Type (8%, or 16 people).

Stage 2. Argumentation trait detection in the experts' texts.

The respondents were asked to analyze an argumentative text by fulfilling the task "Expose the problems the author formulated and their argumentation". Y. Besedina and myself gave our own expert analysis of the initial text argumentation structure and functions to have an opportunity of checking the quality of the respondents' analysis.

3b. Functional argument analysis of the respondents' texts.

The analysis in question was centered on detecting argument functional components and their semantics. We used R. Crable's (1976) system of functional-semantic analysis who singled out the following:

(a) Claims of four types - Declarative; Policy; Classificatory; Evaluative;

(b) Evidence (=Toulmin's Data) of three compound types:

(b-1) Occurrences (Contrived; Planned; Hypothetical);

(b-2) Reports of Occurrences (Unplanned; Contrived);

(b-3) Expression of Beliefs (Personal; Reported);

(c) Warrants of four compound types:

(c-1) Comparison (Parallelism; Analogy);

(c-2) Grouping (Classification; Generalization; Residual);

(c-3) Causality (Correlation; Circumstance; Cause);

(c-4) Authority.

Also used were semantically non-differentiated Backings, Reservations (=Toulmin's Rebuttals), and Qualifiers. Argumentative texts made by our respondents were then analyzed structurally and functionally, and the results were compared to the data given in the expert analysis. The results gave us the

following peculiarities of the lingvo-argumentative responses of the bearers of CC and CS poles.

CC respondents re-organized initial arguments rather actively, though almost all initial Claims and Warrants were retained. Peculiarities of the argumentation by CC people were these:

- (1) most Warrants were made explicit;
- (2) Warrants of Causality were most often used;
- (3) Claims were mostly of Policy and Evaluative;
- (4) implicit intentions and information in the initial arguments were made explicit;
- (5) most arguments were structurally simple single and were manifested in separate paragraphs;
- (6) Reservations and Backings were often used in the arguments;
- (7) almost no Qualifiers were given in the argumentation;
- (8) on the global level, the Macro-Claims were placed in the beginning of the text.

CS respondents did not change the initial order of arguments, i.e. the author's sequence of arguments was retained. Explicit Claims, Evidence and Warrants given in the initial text were sometimes made implicit in the interpretations under this style. Peculiarities of the argumentation by CS people were these:

- (1) Warrants in the arguments were sometimes implicit;
- (2) Warrants of Generalization were most often used;
- (3) among Claims, 3 types were practically equally used – Declarative, Policy, Evaluative;
- (4) implicit intentions and information in the initial arguments remained implicit;
- (5) many argumentative functions of the initial text were not used in resulting texts of this style;
- (6) most arguments were structurally simple single and were manifested in separate paragraphs;
- (7) almost no Reservations and Backings were used;
- (8) Qualifiers denoting supposition were actively used;
- (9) on the global level, the Macro-Claims were placed in the end of the text – as conclusions.

4. How valid are the results?

Some people would ask: does the cognitive style pole remain the same in all situations? No, it does not have to. In real conditions there can be movement from one pole to the other and even change of the poles [cf. Kholodnaya 2004]. But it is important to stress for our study, that we had only one problematic situation in our experiment. It means that there were no significant factors that could somehow influence the style-change (which is of frequent occurrence when people communicate in different situations). Thus, in our experiment, the temporal factor was stable (the time for the written assignment did not change for different respondent groups). The physical environment was also the same (the experiment was made in the same university classroom at the same time of the day). In other words, the conditions were stable, so our results are valid for at least Russian academic student atmosphere and there were no factors which could entail the 'pulsation' of the constructs that could make them move from one pole of the line to the other. It is also important to note that our both experiments (dividing our respondents into polar groups and their making their own argumentation) were made in the similar environment by the same experiment makers.

5. Conclusion

In sum, we detected considerable differences in argument interpretation by representatives of CC and CS poles of the style in question. It means that knowing such principal features of argument making, an argumentation scholar having no special training in psychology and using no special psychological techniques can differentiate the poles of the style using only such features and can see what kind of person gave specific arguments; the scholar can also predict how CC and CS people would construct argumentation in similar conditions.

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ISSA Proceedings 2014 - A Mediator As A Pragma-Dialectical Critical Designer Of Acceptance

Abstract: Starting from the layout of the five components of the pragma-dialectical research program a mediator, the third intermediary in a mediation session, is characterized as a critical analyst and as a designer, i.e. a practitioner, of acceptance. On the spot of the mediation session she analyses the discourse and puts forward proposals to improve argumentative reality. Consequently the mediator is characterized as a pragma-dialectical critical designer of acceptance.

Keywords: argumentative strategy, critical question, facilitate, mediation, mediator, pragma-dialectical critical designer of acceptance, pragma-dialectics, research program.

1. Introduction

The research program of pragma-dialectics has five components: the philosophical component, the theoretical component, the component of analysis, the empirical

component, and the practical component (van Eemeren, Grootendorst, Jackson & Jacobs, 1993, pp. 21-25; van Eemeren & Grootendorst, 2004, pp. 11-41). The target of this paper is to present the mediator as a pragma-dialectical critical designer of acceptance. In order to achieve this target I show why a mediator can be characterized as a critical analyst and as a practitioner within the research program of pragma-dialectics. Thus, in this paper I particularly refer to the component of analysis that rests upon the research results from the theoretical component, and to the practical component of the research program.

2. The research program of pragma-dialectics

Van Eemeren and Grootendorst (2004, p. 41) envision in their introduction of the layout of the five components of the Realm of Argumentation Studies “to get an overall picture of the state of the art in the discipline, to distinguish different approaches from each other, and to indicate where there are genuine opportunities for mutual cooperation.” A research program consists of its five components. Every component is distinct from, as well as related to the other components. Thus the layout of the five components is an option to separate and to “cluster” the matters of argumentation research (cf. van Eemeren & Grootendorst, 2004, p. 41). Pragma-dialectics is a research program (cf. van Eemeren, Grootendorst & Snoeck Henkemans, 1996, p. 275).

In the philosophical component of pragma-dialectics, the philosopher characterizes “*termini technici*” by defining them (van Eemeren & Grootendorst, 1994, p. 11). Van Eemeren and Grootendorst (2004, p. 21) designate the “critical-rationalist philosophy” as the start of the research in this component in pragma-dialectics.

In the theoretical component of pragma-dialectics, the theorist uses terms to build a blueprint. Scopes and functions of the blueprint are characterized, e.g., for the use of the grid in accessible analyses of fragments from discourse. For instance, particular presuppositions are due, and particular means, such as translation criteria, are to be used in the analysis (cf. van Eemeren & Grootendorst, 1984; van Eemeren, Grootendorst, Jackson & Jacobs, 1993; van Eemeren, Houtlosser & Snoeck Henkemans, 2007). Apparently only those actual matters can be replaced for which there is a stand-in in the grid, thus the scopes of the grid are restricted (cf. van Eemeren & Grootendorst, 2004, p. 19, who employ the metaphor of a grid as a magnifying glass that constrains the matters in focus).

In the blueprint in pragma-dialectics protagonist and antagonist discuss about a claim to solve a problem through a problem-solving discussion. Thus the aim of problem-solving discussion is the solution of the problem, i.e. acceptance of the claim. Note that “acceptance of the claim” is determined in a sense within the connectivity of problem-solving discussion, thus “acceptance” is determined in a sense of pragma-dialectics. The parties apply argumentative strategies, i.e. they arrange modules of the blueprint oriented towards a particular aim. For example, critical questions are argumentative strategies because applying a critical question manifests a speech act that is a means to get to the aim of problem-solving discussion. In particular, I suggest that a critical question manifests the speech act “Requesting argumentation” (cf. van Eemeren & Grootendorst, 2004, p. 68). Voicing a critical question is an option to appear critical towards the application of an argument scheme. By asking a critical question the character voices the speech act “requesting argumentation ‘to infer the very application of the argument scheme’”.

In the component of analysis, the analyst uses the grid to reconstruct and evaluate fragments.**[i]** As the scopes of the grid are restricted the scopes of an analysis are restricted. For example, an analyst can reconstruct and evaluate argument schemes. Garssen (2001) presents the pragma-dialectical argument schemes and the respective critical questions. I want to spell out two functions of critical questions. First, they are means of the characters in problem-solving discussion to get to the aim of the solution of the problem. It is an assumption of the analyst that a person in a dispute can ask a question that a pragma-dialectical analyst can localize as a critical question in problem-solving discussion. In the blueprint it is characterized when and how an actual question is localized as a critical question.**[ii]** However, second, a critical analyst herself uses critical questions to test whether an argument scheme she has reconstructed has been employed “correctly” in the very constellation of the dispute (cf. Garssen, 2001, p. 91). I suggest that when an analyst uses a matter from the grid, e.g. a critical question, he “uses the grid”. In pragma-dialectics, in order to apply the respective means to analyse a text the analyst’s intuition is required. The result of the analysis is an interpretation of the text and this interpretation is restricted to the scopes of the grid used.

In the empirical component, the empiricist does empirical research. The aim of empirical research is to refine (parts of) the blueprint. An empiricist tests whether

the blueprint suits argumentative reality, whether it can be used to analyse discourse.

In the practical component, the practitioner has the target to improve argumentative reality. The research results from the other four components are used to arrive at that aim. Consequently, four practitioners can here be distinguished. For instance, the practitioner that uses research results from the theoretical component is the practitioner (theoretical). I want to present two examples of actual practitioners in pragma-dialectics.

First, in “reflection-minded” (van Eemeren, 1990, p. 43) teaching, a practitioner (theoretical) teaches students the grid. However, based on her skill with respect to analyses the same person as a practitioner (analytical-intuitive) [iii] teaches students to analyse fragments with the help of the grid. She supports to route the intuition of students in the sense of the grid. Argumentative reality is improved because she supports the students to achieve clarity to resolution processes in disputes in their everyday life as they can make use of the grid on the spot of their conversations.

Second, the research results from the component of analyses can be made use of for the “design of discourse processes” (van Eemeren, Grootendorst, Jackson & Jacobs, 1997, p. 227). In this paper I present the mediator as a pragma-dialectical practitioner who particularly uses those research results. As a designer the mediator intuitively uses the “diagnostic power” (cf. van Rees, 2001) of the grid to facilitate getting to clarity to (how to) manage problem-solving discussion. The diagnostic power means not (only) that the grid can be used to anticipate what can go wrong (cf. van Rees, 2001, p. 459) but I suggest that it can also be used to present what is needed in a dispute in order to actualize the respective sense of reasonableness. Thus through proposals of this practitioner argumentative reality is improved “in a purposeful way” (van Eemeren & Grootendorst, 2004, p. 32). For example, making use of the diagnostic power of the grid an argumentation researcher in pragma-dialectics can spell out when an argument scheme has been *or will have been* employed correctly: “[...] if all the relevant critical questions that the antagonist in the dispute could ask can [will] be answered satisfactorily.” (Garssen, 2001, p. 91)

3. The mediation session and the target of the mediator

I want to elucidate on some important terms I employ. I briefly refer to

“mediation session” and “mediator”. The World Intellectual Property Organization (WIPO) (2009, p. 2) establishes “mediation” as “an informal procedure in which a neutral intermediary, the mediator, assists the parties in reaching a settlement of the dispute.” What is here spelled out as “dispute” in my terms means “conflict”. In the course of a mediation session about a conflict there are utterances that the participants and the third intermediary put forward that can be reconstructed as matters from the sequence of problem-solving discussion. When I employ the term “mediation session” I refer to the course of those utterances. In a mediation session there are the participants and a mediator (cf. above: third intermediary). The target of a mediation session is the resolution of the disagreement between the participants. The target of a mediation session is achieved when the point of view about which the disagreement occurs is acknowledged by both participants.

The mediator has two targets. First, she wants to support the participants achieving a resolution of the respective disagreement. Second, she wants to appear neutral. In order to appear neutral a person actualizes a particular behaviour. In this paper I show that in order to achieve her targets the mediator behaves like a critical analyst and like a practitioner (a designer of acceptance) in pragma-dialectics.

4. The mediator as a pragma-dialectical critical analyst

The mediator behaves like a pragma-dialectical critical analyst. As a critical analyst on the spot of the mediation session the mediator chains the discourse to matters from problem-solving discussion. Aakhus (2003, p. 284) employs the term “reconstruction in practical circumstances.” The mediator checks whether or not the participants behave “correspondingly” to the grid, whether they particularly actualize problem-solving discussion. Thus, apparently as a critical analyst a mediator assumes in her reconstruction and evaluation that the utterances in the dispute are put forward by actual parties in an actual problem-solving discussion: “making a decision on the resolution of their conflict [disagreement], necessarily involves *critical reflection and evaluation* [...]” as “[t]he communicative process in mediation [session] [...] largely constitutes an argumentative discussion” (Greco Morasso, 2008, p. 104, italics by A.V.). Note that Greco Morasso writes “largely” which I suggested, too, with the sense that I established for “mediation session”. The mediator as a critical analyst can put forward utterances in the dispute. Then she chains the content of her utterance to the results of her reconstruction and evaluation of the discourse.

As a critical analyst the mediator evaluates the discourse by intuitively making use of particular matters from the grid; she can employ an actual argumentative strategy. For example, as a critical analyst the mediator has the target to evaluate the actualization of argument schemes in a mediation session. Checking whether the actualization of an argument scheme is plausible is a means to support the participants achieving a resolution of the respective disagreement in accordance to the manifestation of reasonableness that is determined in the blueprint. Thus behaving like a critical analyst in pragma-dialectics in the course of a mediation session a mediator can ask a question that a pragma-dialectical analyst can locate as a critical question, i.e. right on the spot in the mediation session the mediator can make use of the grid. Jacobs (2002, p. 1414) writes:

[B]y asking questions, mediators can also perform argumentatively relevant tasks. In many respects, such questioning in context can substitute for the kind of advocacy that would be heard in direct rejections, open disagreement, and explicit argumentation.

Note, that Jacobs suggests that the mediator can employ questions to actualize an argumentative strategy because at the very constellation of the dispute the mediator may put forward *particular* actual critical questions as she seeks to accomplish her target to appear neutral. The mediator thus avoids (“substitutes for”), e.g., “direct rejections” yet achieves her target to evaluate the actualization of an argument scheme.

5. The mediator as a pragma-dialectical practitioner

The mediator behaves like a pragma-dialectical practitioner. It is plausible to assume that a mediator wants to improve argumentative reality in a mediation session (cf. van Eemeren, Grootendorst, Jackson and Jacobs, 1997; Aakhus, 2003; WIPO, 2009). As a practitioner the mediator improves argumentative reality in the dispute by chaining the discourse to matters from problem-solving discussion. The mediator supports reaching acknowledgment of particular matters from the stencil which have (not) been actualized in the mediation session. However, clarity and actual acceptability of matters from problem-solving discussion are needed as the basis to achieve acknowledgment of those matters.

Clarity to the matters should be a target in a mediation session. Jacobs (2002, p. 1423) writes that it is a mediator’s “official” behaviour to support the participants achieving clarity: “mediators [...] officially act to clarify and inform” Clarity to the

matters is yielded in the course of the mediation session as the mediator employs her argumentative skills for supporting to achieve clarity in the course of the dispute. For example, a means that the mediator can employ to support achieving clarity is a question: "The asking of questions thus functions not merely to perform such tasks as probing, clarifying [...]" (van Eemeren, Grootendorst, Jackson & Jacobs, 1993, p. 138). With the actualization of clarity to a particular matter through a clarity formula a person spells out her commitment to "having recognized" that matter. The utterance "I get it." is not to be understood as a point of view. In a mediation session it makes no sense when one person asks another "Why do you recognize this?" Instead, the mediator may put forward that the person has spelled out clarity to that matter.

Clarity to a matter is needed for actual acceptability of that matter to occur. Acceptability of a matter is actualized when a person says that this matter "can be accepted". It does make sense to ask this person "Why do you say that this matter can be acknowledged?" Again, the mediator *can* actually facilitate that this question occurs. Thus the mediator supports reaching a clarity formula as to the actual acceptability of the particular matter. Actual acceptance of a matter, in turn, is based actual acceptability of the matter.**[iv]**

The mediator may spell out her intent to intuitively make use of a pragma-dialectical grid and its diagnostic power to support achieving clarity to (how to) handle the discourse that has been stated, and to that which is advisable to be stated in the respective dispute. As clarity to (how to) handle the respective discourse is the basis for actual acceptance the mediator thus makes use of the diagnostic power of the grid to actually facilitate acknowledgment of the respective matters. When the mediator puts forward that and how particular matters from the grid have been actualized, or that and how particular matters from the grid are advisable to be actualized in the course of the dispute she appears neutral as to *content matters in the dispute* because she chains her proposals to (research results from) pragma-dialectics. Still she actually facilitates acceptance (in the sense of the grid).

Making use of Aakhus' (cf. 2003) distinction I suggest that the mediator as a practitioner in a mediation session is a designer. She actualizes the character of a pragma-dialectical designer of acceptance: the "object to be designed" is the actualization of particular actions in accordance to, particularly, the respective statute of problem-solving discussion, the "environment in which the object is

used” is the very dispute. The mediator does neither decide that any matter in the course of the mediation session *can* be acknowledged, i.e. that it is actually acceptable, nor that it *is* acknowledged, i.e. that it is actually accepted. The mediator *supports* the parties’ accomplishing acknowledgment of matters as she supports their achieving clarity to this matter.

6. *The mediator as a pragma-dialectical critical designer of acceptance*

The mediator can be characterized as a pragma-dialectical analyst because she has the argumentative competence of a critical analyst. She uses the grid, e.g. critical questions, as a standard in the analysis of speech acts in mediation. The mediator can be characterized as a practitioner because in pragma-dialectics a designer is a practitioner, and the mediator is a designer of acceptance as she facilitates acceptance of particular matters in mediation. Moves with the intention to get to clarity to and acceptability of particular matters are means to facilitate acceptance of those matters in mediation.

The mediator is a *pragma-dialectical* critical designer of acceptance. Acting like a pragma-dialectical critical analyst and like a designer of acceptance she facilitates manifesting problem-solving discussion (cf. Greco Morasso, 2008, p. 14 who writes the mediator is a “facilitator of parties’ communicative interaction”). As “an architect of the dispute” (Greco Morasso, 2008, p. 14) the mediator pursues “to realize the [*pragma-dialectical*] ideal in practice.” (van Eemeren, Grootendorst, Jackson & Jacobs, 1993, p. 174)

In order to arrive at her aims to appear neutral and to facilitate acceptance of particular matters from problem-solving discussion (to facilitate arriving at the solution of the problem) the mediator as a pragma-dialectical critical designer of acceptance instantly analyses in the sequence of mediation with the help of the grid and instantly voices her recommendations, e.g. by asking critical questions.

The mediator uses her intuition to instantly reconstruct the speech acts; just as the parties instantly reconstruct the speech acts in problem-solving discussion (cf. van Eemeren, Grootendorst, Jackson & Jacobs, 1993, p. 92):

If an analytic account of a sequence is given [by the mediator] in which certain reconstructed commitments of a protagonist are used to explain the sense and force of an antagonist’s response, the account implies that the antagonist has performed or could perform a similar sort of reconstruction.

For example, in article 17 WIPO (2009, p. 13) states that “the mediator and the parties shall not introduce” in any other context, e.g., “(i) any views expressed or suggestions made by a party with respect to a possible settlement of the dispute” and “(ii) any admissions made by a party in the course of the mediation [session]”. Note that in order to behave in accordance to that article there must be clarity to which utterances in the dispute are “views expressed”, “suggestions made” or “admissions made” by the participants. Accordingly, as a critical analyst with the aim to “improve argumentative reality” the mediator reconstructs a speech act, for example, as a “view expressed”. The result is clarity to this matter which is the groundwork for acceptance of this matter.

As a pragma-dialectical critical designer of acceptance the mediator instantly manages particularly those matters that she senses to be important in order to solve the problem. For example, as a critical analyst with the aim to “improve argumentative reality” the mediator facilitates acceptance of the presuppositions of problem-solving discussion in mediation: “Turn 120 questions a pragmatic presupposition of the mediation activity itself.” (van Eemeren, Grootendorst, Jackson & Jacobs, 1993, p. 128) The mediator’s recommendations rest on her reconstruction and evaluation and are manifested by, for instance, “the ‘*educational work*’ [s]he makes for bringing them [the parties] to argumentation” (Greco Morasso, 2008, p. 272, italics by A.V.). As a critical analyst with the aim to “improve argumentative reality” the mediator as a pragma-dialectical critical designer of acceptance applies argumentative strategies. For example, she can ask questions that come up to the function of critical questions and thus “more or less strongly suggest a particular answer” (van Eemeren, Grootendorst, Jackson & Jacobs, 1993, p. 137). As critical questions are matters from the grid the mediator uses the grid. Since applying a critical question manifests a speech act that is a means to get to the aim of problem-solving discussion the mediator applies an argumentative strategy.

7. Summary

In this paper I made use of the form of five components of pragma-dialectics as a means to present the character of a mediator as a pragma-dialectical critical designer of acceptance. In order to achieve “clarity to the matters” (van Eemeren & Grootendorst, 2004, p. 24) I characterized the mediator to act like a critical analyst and like a designer of acceptance in pragma-dialectics. The grid connects critical analyst and practitioner. As a pragma-dialectical critical designer of

acceptance the mediator applies argumentative strategies, e.g. critical questions, to appear neutral yet facilitate manifesting problem-solving discussion.

I suggested that clarity to, acceptability of and acceptance of the matters in problem-solving discussion yield the groundwork for arriving at a solution of the problem in mediation. However, “[v]erbal externalization of acceptance (or non-acceptance) by the listener [which] means that the mutual obligations between the interlocutors are firmly and clearly established” (van Eemeren & Grootendorst, 1984, p. 57) is a means to achieve the resolution of the disagreement and thus it is a means to resolve the conflict in a mediation session.

NOTES

- i.** Cf. Vesper’s PhD (2015) why in pragma-dialectics an analyst is a “critical analyst”.
- ii.** Likewise, in the blueprint other matters, e.g. “acceptance”, are determined and it is characterized when and how an utterance can be localized as, e.g., acceptance.
- iii.** Cf. Vesper’s PhD (2015) why I label the pragma-dialectical component of analysis the “analytical-intuitive component”.
- iv.** Cf. Vesper’s PhD (2015) for the relationships of clarity, acceptability, and acceptance – particularly in mediation.

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ISSA Proceedings 2014 - How To Put It Vaguely

Abstract: The paper examines speakers' possible goals in employing vague expressions in a gas bill, as well the harmful effects such expressions can have on addressees (i.e. consumers). The paper tries to demonstrate that vagueness does

not exclusively boil down to lexical vagueness, i.e. uninformative words (Channell 1994). Vagueness also means not explicating relevant information but giving them as presupposed, the speaker taking for granted that the addressee is already familiar with such content.

Keywords: Gas Bills, Grice, Cooperation Principle, Presupposition, Vagueness, Violations of conversational maxims, Withholding information.

1. *Introduction*

1.1 *Vagueness*

The notion of vagueness has been mainly investigated in philosophy (Russell 1923; Keefe 2000) with the challenge posed by the Sorite Paradox: how many sand grains make a “sorite”, a heap of sand? In semantics it is recognized that fuzzy boundaries are a characteristic of words. Take for instance Labov’s (1973) continuous transition between cups and bowls; the borderline between them is not clear-cut, but fuzzy and graded. As Anolli (2001) puts it, things deviate progressively from a standard (or prototypical) type, and we enter a semantic vagueness zone, where the same object could be, in turn, a bowl, a mug or a glass.

Besides the researchers’ interest in the intrinsic vagueness of terms, scholars in pragmatics started to focus on the art of being vague in communication. Research started to be conducted in order to investigate how ordinary language leaves room for people to be vague, to avoid precision and the commitment associated with. Studies – mainly in English (Crystal & Davy (1979); Prince et al. (1982); Channell (1994); Cutting (2007), but also on Romance languages (Mihatsch 2007; Voghera 2013) and Chinese (Drave 2000) proved that one of the ways speakers demonstrate their competence is through their use of a degree of vagueness which is right for the purpose of the linguistic context. According to whether they are involved in a gossipy chat, an interview, a student – professor interaction (Channell 1994), a conversation with a doctor colleague about the state of a patient (Prince et al. 1982) or even in a written context, speakers are perfectly able to tailor their language by varying the precision and vagueness level to make it suitable to the situation (Channell 1994: 4). As a matter of fact, vague expressions occur both in spoken and written language, but given the fact that they tend to induce an ‘informal flavour’ to communication, they are more frequent in oral rather than written contexts. Channell (1994:18) distinguishes

between three different ways in which speakers can avoid being precise or exact. These are: *vague additives* (adding a word/phrase to what would otherwise be a precise statement, so that it results in a vague reading: 'a team of *around* 10 people'; 'maybe a little bit of stone or *something like that*'); vague words (words which are always, and unabashedly vague, such as *thingummy*, *whatsit*. For quantities, there exist such terms as *loads of*, *heaps of*); and at last, *vagueness by implicature* (when an apparently precise sentence can be used and understood to have a vague meaning, as for instance 'Sam is 6 feet tall', sentence which can be understood as both precise ('Sam is 6 feet tall') and vague ('He is actually 6 foot and a quarter of inch') and where the vagueness seemingly consists precisely in not knowing whether the utterance is to be interpreted as precise or approximate.

Channell's main contribution is having showed that, in contexts where less precision is judged to be required, vague expressions can be used to tailor the amount of information given according to the perceived purposes of the interaction". According to the author, therefore, "vagueness in language is neither all 'bad' nor all 'good', what matters is that vague language is used appropriately (Channell 1994: 3).

1.2 *Uses and goals of vague language*

Along with the function of tailoring utterances such that the right amount of information is given (for instance not providing precise information in a context where approximate information would do), vague language also enables speakers to talk about a topic they are not very knowledgeable about or they do not have the necessary vocabulary (Channell 1994: 170). When this is case, markers of the type: 'or things like that'; 'or something', 'and the like' help speakers to find a way of actually talking about something they do not quite have the vocabulary to express; signalling at the same time the speaker's lack of knowledge to the interlocutor.

Another possible use of vague language is deliberately withholding information which might be expected by the hearer in a given situation. According to Channell (1994), the speaker can withhold information either for deceitful reasons (or simply reasons of personal privacy), or as a defensive tactic to avoid committing himself to a precise reply.

A possible case of defending one's privacy or even intentionally deceiving the other, can be illustrated by a very pertinent and amusing example taken by

Channell from a Boopsie cartoon strip. Boopsie, asked by her conversational partner (possible her partner in life as well) what she has bought from Elvis' memorial house (A: 'Did you buy a postcard or something?'), responds with a very vague formulation (B: 'Or something...'), letting the interlocutor infer that what she actually bought is much more than a postcard. By withholding, that is, not giving information which the speaker (here Boopsie) possesses and which questioner expects to receive, the speaker performs a violation of the Quantity maxim and triggers implicatures" (Channell 1994:179).

The speaker may opt for a vague reply also when putting in practice a defensive tactic. If asked for instance something like 'When is the work going to be done?', one can say something like "Well the quote might be done within three or four days but the job won't be done for at least five weeks" **[i]**) authorizing the hearer to infer that a precise date cannot be provided as the speaker does not know how much time the job will exactly take.

In both cases, either deceitful or simply not wanting to commit, from the listener's perspective the speaker's reply can be seen as unhelpful and insufficiently informative and possibly trigger implicatures.

In a similar vein to Channell (1994), Poggi & Vincze (2012); Vincze et al. (2013) see vagueness as determined by a lack of detail in what one knows or in what one decides to communicate about a certain topic. Namely, according to Vincze et al. (2013) one may be vague either because one personally has vague knowledge (*no power to be precise*), or, although having detailed information, one does not want to reveal it to the listener (*no goal to be precise*) because possibly harmful, either for the Interlocutor (*take the case of negative diagnoses*), or for himself. On the basis of whether the speaker chooses to withhold information to protect the interlocutor or himself, Vincze et al. (2013) distinguish between altruistic and selfish goals of vagueness. If the latter is the case, the speaker may be guilty of concealing relevant information for the interlocutor, i.e. of deceitful behaviour (Castelfranchi & Poggi 1998).

2. *Presuppositions*

In view of our case study analysis in Section 3, together with the concept of vagueness, we also want to introduce the concept of *presupposition*, a concept primarily investigated in philosophy and linguistics.

Before moving on, we first have to distinguish between presuppositions as intended in ordinary usage (as for instance 'John wrote Harry a letter, *presupposing* he could read'), and the technical notion of presupposition, "restricted to some pragmatic inferences or assumptions that seem at least to be built into linguistic expressions and which can be isolated using specific linguistics tests, (especially, traditionally, constancy under negation[**ii**])" (Levinson 1983:168).

The first philosopher dealing with the concept of presupposition is Frege (1892). As stated by Frege,

If anything is asserted, there is always an obvious presupposition that the simple or compound proper names used have a reference. If one therefore asserts 'Kepler died in misery', there is a presupposition that the name 'Kepler' designates something. That the name 'Kepler' designates something is just as much a presupposition of the assertion 'Kepler died in misery' as for the contrary [i.e. negative] assertion [Kepler did not die in misery]. (Frege, 1892 (1952:69).

We see how a presupposition is something the speaker assumes to be the case before even making an utterance. Namely, an utterance such as 'Kepler died in misery', presupposes that 'Kepler has/had a referent in real life'. i.e. that Kepler does/did exist. Besides presupposing that 'Kepler has/had a referent in real life', an utterance like 'Kepler died in misery' presupposes as well that Kepler can be univocally identified by both speaker and hearer (Levinson 1993:186).

Linguists over time came up with a list of linguistic forms which are considered to be indicators of potential presupposition (Karttunen 1971 mentions a list of 31 such presupposition triggers). Definite description is one of them. Any referent encoded by a definite article + noun, definite pronoun, definite possessor + noun, or proper noun is presupposed to exist. The very presence of such definite descriptions presupposes both the existence of the referent, as well as the fact that the referent is represented in both speaker and hearer's mind. By means of presupposition speakers avoid foregrounding that which they have no reason to foreground, presupposition representing a necessary condition for language to function in everyday world.

To illustrate a case of presupposition triggered by definite descriptions (here in the form of a proper noun and a definite possessor + noun), let us choose the

same straightforward example as in footnote (2):

'Anne's dog is cute',

where it is presupposed that Anne exists and that Anne has a dog. At the same time, it is also presupposed (by the speaker) that Anne and her dog are familiar to both speaker and hearer. If it hadn't been so, the speaker would have provided further information on Anne, to guarantee the interlocutor's understanding. We can therefore state that taken into account that the speaker does not come up with further information on Anne's account, he takes for granted that the interlocutor is familiar with the person at issue (of course, he sometimes may be wrong).

This is very much in line with a pragmatic theory of presupposition, having at its basis concepts such as *appropriateness* (felicity) and *mutual knowledge* (or common ground or joint assumption).

"An utterance A pragmatically presupposes a proposition B iff A is appropriate only if B is mutually known by the participants". (Levinson 1983:205).

It is worth recalling Levinson's point concerning the concepts of appropriateness and mutual knowledge at the basis of pragmatic presuppositions. Levinson (1983) points out that it is not inappropriate for the speaker to state something like

'I am sorry I'm late, my car broke down'

even though the hearer did not previously know that the speaker possessed a car. A presupposition such as 'Speaker has a car and drove to the meeting point', although not initially part of speaker/hearer shared knowledge, is assumingly part of the more general mutual knowledge that

'Average people do possess a car (which can sometimes break down)'.

It is interesting to note that the following utterance

'I am sorry I'm late, my fire-engine broke down'

is probably not appropriate in circumstances where it is not mutual knowledge that the following presupposition is true:

'Speaker has a fire engine'

As Levinson (1983) points out, this is so because it is not consistent with the average man's beliefs that average people own fire engines.

Although inappropriate, presuppositional constructions are sometimes used even though the presupposition is not part of the "shared background" of the two interactants (whether the speaker knows it or not). Moreover, there are other cases when speakers "deliberately put [new information] in a background position – thus in a sense it is shielded from challenge" (Givón 1989). In the same line, Eco & Violi (1987) argue that with presuppositions "we are not so much interested in what is-the-case, but rather in what someone tries to make someone else believe to be the case". And again, "through presupposition the speaker/writer frequently rhetorically constructs a background rather than simply responds to one that is already there" (Hardy 2003: 54).

3. A case study: bills and vague referents

Bills are a type of informative texts whose role is to inform consumers about their payment obligations (precise amount to pay as well as payment deadlines). In case of service shut off for non-payment, the consumer has to be able to find on the bill information on the re-connect fee and deposit[**iii**]. Such relevant information should be provided on the bill and the consumer shouldn't have any difficulty in finding them. Nonetheless, this is not always the case.

I will analyse below a real example of a gas bill where by means of a definite presuppositional construction, not previously given information is put in a background position, the utility provider taking for granted that the consumer is abreast of the presupposed content. The following extract is taken from a gas bill issued by E-on, a German provider of natural gas in Romania, among other countries. I will analyse a reference E-on makes to a governmental decision, GD 1043/2004, formulation that can be qualified as vague and that has the effect of leaving the consumer puzzled. I argue that E-on's communication can be seen as a case of possibly deliberately withholding information which is relevant for the addressee, and therefore as a case of selfish vagueness (Poggi & Vincze 2011; Vincze et al. 2012). Vagueness does not exclusively boil down to lexical vagueness and uninformative words; vagueness also means not stating information (relevant for the hearer) and giving them as presupposed, as taken for granted.

In my analysis of E-on communication, I make use of the two concepts introduced above, presuppositions and deliberately vague communication, trying to establish

a link between the two.

Let us take a look at the content of the bill. After having informed the consumer of being at risk of gas shut-off for nonpayment, the utility provider goes on listing the re-connect conditions in case the consumer is confronted with a gas shut-off.

“Gas will be turned on again once the bill, the late payments interests and the re-connect fee are entirely paid and once a *deposit equivalent to the gas consumption determined according to GD[iv] 1043/2004 is constituted [by the consumer]”*.

Let us focus on the last part of the sentence signalled in italics, more precisely on the part mentioning a deposit to be paid according to a certain GD 1043/2004. This part of the sentence presupposes[v] that there is a deposit and there is a GD 1043/2004 which regulates the amount of the deposit to be paid. The author of the text may also hold the more specific presupposition that the reader is abreast of the provisions of the governmental decision 1043/2004.

These presuppositions present in the bill are problematic because it is not mutual knowledge between all participants in the exchange (E-on and average bill payers) that GD 1043/2004 even exists, let alone the content of its provisions[vi].

The reader is therefore invited to construct the background knowledge that would justify the presupposition (i.e. that GD 1043/2004 exists) and moreover, to come up with GD 1043/2004 provisions. But while consumers, on the basis of an inferential process, are able to come up with the presupposition that GD 1043/2004 does exist, they cannot come up (or at least not on the spot, without a documented research through the database of governmental decisions, or, if inspired enough, through the contract signed with E-on) with its provisions[vii]. This second type of presupposition (concerning GD 1043/2004 provisions) can be classified as a *marked presupposition*[viii] (Hardy 2003: 54), i.e. involving new information which cannot be deduced from previous information. It is unreasonable to assume that the consumer would know about the governmental decision GD 1043/2004 and be familiar with its provisions. One would expect that such important information for the consumer, although specified in the distant contract, would not be presupposed in the bill (the only piece of document accurately read by the consumer).

3.1 Possible goals in using GD 1043/2004 abbreviation

As Vallauri & Masia (2014) observe concerning presuppositions, “the act of informing the addressee is absent, or more accurately it is skipped and treated as not necessary” (Vallauri & Masia 2014:162). In our case as well, E-on envisages a world where the addressee already knows about the existence of GD 1043/2004 as well as its content. This being the case, there is no need to assert it again, but just resuming it for the sake of understanding the rest will do the job (Vallauri & Masia 2014: 162). E-on behaves as full explicitation of some already-known content would be the superfluous repetition of some information the consumer already knows.

Vallauri & Masia (2014) come up with several hypotheses – some benevolent and some less – to explain why the speaker/writer would not invest effort in fully explicating content taken for granted. Such a strategy may be aimed at:

(1) *“saving the addressee superfluous effort, because that content is already known to her/him;*

(2) *saving the addressee superfluous effort, because that content can be processed with minor attention without any damage to the comprehension of the message;*

(3) *preventing the addressee from becoming completely aware of (all the parts of) that content, lest (s)he may challenge and reject it. Presupposition weakens the tendency to critical reaction”.*

(Vallauri & Masia 2014: 165)

Let’s examine these three cases one by one.

A possible reason why speakers/writers resort to presuppositions is *economy of effort*. When some information is already in the knowledge of the addressee, the speaker is entitled to present it as presupposed. Let’s take for instance the above-mentioned example ‘Anne’s dog is cute’. If the speaker believed that the addressee weren’t familiar with Anne and her dog, he would have said something like ‘There is a girl I know, she is called Anne and she has a cute dog’. Having instead chosen presupposing triggers such as proper names and possessive determiners, ‘Anne’s dog is cute’, indicates both that the speaker is entitled to believe that the addressee knows about the existence of Anne and her dog, as well as the fact that the piece of information that truly deserves the hearer’s attention, is the dog’s cuteness (and not the fact that Anne has a dog, which might actually

be new information for the hearer).

This way the hearer will pay much less attention to the presupposed content because “it comes with the ‘warning’ that it does not need thorough examination, being something already known to her/him [...] while full examination of already-known content would be a superfluous repetition of some effort that one has done in the past” (Vallauri & Masia 2014: 163).

But what if the information presupposed by the sender is not stored in the knowledge of the addressee, can we still grant the benefit of the doubt to the sender or should his strategy be seen as malevolent and damaging the addressee? According to (Vallauri & Masia 2014), in most of the cases, although the presupposed content is not familiar to the addressee, we can still consider that the speaker’s non explicit mention can be aimed at saving superfluous effort to both addressee and sender, as the content at issue is not that important and doesn’t jeopardize the overall comprehension of the message.

A message on a piece of paper left by the wife on the kitchen table ‘Heat the stew in the oven’ is adequately processed by the husband, although he did not previously know that his wife had prepared stew for dinner.

This is just one possible example of possible presuppositions put into place by speakers in everyday conversations, presuppositions that although they play something off and present it as taken for granted (while actually unknown to the addressee), at the same time, they do not jeopardize in any way the comprehension of the message from the part of this latter.

As Vallauri & Masia (2014) mention, there are nonetheless cases when the sender, in his playing off details, has less honourable intentions. As they put it,

“Presenting information as not to be processed thoroughly although it is actually unknown to the addressee may be aimed not only at allowing the addressee some economy of effort, but also at avoiding full understanding of that information on the part of the addressee” (Vallauri & Masia 2014: 163)

3.2 Expliciting information – a risky business

Knowing that consumers are not aware of the conditions of the Governmental Decision regulating the deposit, E-on should have said the following:

There is a Governmental Decision 1043/2004 which regulates the amount of the deposit to be paid in case of gas shut off. The amount of the deposit is calculated at the current market price of natural gas, including VAT. The quantity of gas calculated for the purpose of the deposit consists of 300 metre cubed gas, which amounts to XXXX Lei[**ix**]. The deposit will be seized for 2 years and will be returned to the consumer after the end of this period.

which represents the conditions stipulated by GD 1043/2004 and present on the E-on contract. But such a formulation is very likely to capture the consumer's attention because alarming. Instead, a message stated in the following way might evade more easily the reader's attention.

"Gas will be turned on again once the bill, the late payments interests and the re-connect fee are entirely paid and once a deposit equivalent to the gas consumption determined according to GD 1043/2004 is constituted [by the consumer]".

Reference to the GD 1043/ 2004 is made *en passant*, not to attract attention on the negative consequences having to pay such a deposit would have for the consumer. Nonetheless, due to such a formulation, E-on is on the safe side: they can't be accused of not having quoted the governmental decision (where the exact amount of metre cubes is specified, as well as the period of time this deposit will be seized by the service provider). E-on's formulation violates the cooperative principles of communication, where interactants are supposed to collaborate to reach a maximally effective exchange of information.

4. *Violating gricean maxims*

According to Grice (1975), speakers (generally) observe a Cooperative Principle, i.e. they conceive their utterances in such a way to contribute towards a maximally effective exchange of information. The cooperation principle is divided in four maxims (Quantity, Quality, Relevance, Manner) describing specific rational principles observed by people who obey the cooperative principle. "The conversational maxims [...] are specially connected with the particular purposes that talk (and so, talk exchange) is adapted to serve and it is primary employed to serve" (Grice 1975)

If we look at the bill fragment under analysis from the perspective of the Cooperative Principle, we notice some maxim violations.

As already mentioned, E-on does not state on the bill the amount in Lei of the deposit demanded by the company in case of shut off for non-payment, but simply makes reference to the governmental decision 1043/2004. As we saw, on the contract stipulated between the provider and the consumer, E-on specifies that the deposit is equivalent to 300 m³ of gas as well as the fact that the “value of the deposit is calculated on the basis of natural gas prices (VAT included) in force the day of the constitution of the deposit”. Considering that the price of 1 m³ can be subjected to changes due to gas market price and euro fluctuations, the company’s choice of not stating an exact amount (on the contract) can be seen as a self-protection strategy against approximate or inaccurate declarations. If we accept this hypothesis, E-on can be considered to respect the Quality maxim, i.e. not saying something for which one lacks adequate evidence.

The Quantity Maxim instead (‘Make your contribution as informative as it required for the current purposes of the exchange’ and ‘Do not make your contribution more informative than is required’) is overtly violated. By referring to the Governmental Decision, they appear to be rigorous and precise. The consumer would have nonetheless settled with a more ‘informal’ notice of how much the deposit amounts to (expressed for instance in cubed metres, as in GD 1043/2004 and as in the contract). We see how, on the one side, by referring to the Governmental Decision, E-on goes beyond the precision threshold required by the addressee, while at the same time they don’t reach it: what they fail to mention on the bill is precisely what the consumer requires to know: the amount of the deposit to pay in case of service shut off.

Considering that what the deposit amounts to has already been indicated twice (on the contract stipulated between E-on and consumer, as well as in the Governmental Decision 1043/2004 they refer to), E-on might have considered that saying it again would be redundant, over informative. But the bill is precisely the context where one expects to be informed on all the payment obligations. According to Grice, being over informative is not even a transgression of the Cooperation Principle, but merely a waste of time (Grice 1975:26). Not giving the required information in the required context, can be instead seen as a violation of the CP.

Making reference to a Governmental Decision when one expects to find out the amount of the deposit, can be seen as a violation of the relevance manner as well. As Grice puts it, “I expect a partner’s contribution to be appropriate to the

immediate needs at each stage of the transaction. If I am mixing ingredients for a cake, I do not expect to be handed a good book [...]” Grice 1975: 28. Moreover, considering that the consumer can’t be expected to be familiar with such technical notions as GD 1043/2004, employing such a terminology in a document which is supposed to have an informative purpose, can be seen as an obscure expression, and therefore a violation of the Manner maxim.

5. Conclusion

In this paper I examined what communicative effects arise from using vague expressions, as well as speakers’ possible goals in employing such expressions. Vagueness does not exclusively boil down to lexical vagueness and uninformative words, vagueness also means not stating information (relevant for the hearer) and giving them as presupposed, as taken for granted.

As highlighted by van Eemeren & Grootendorst (1992), in everyday conversation and argumentation, many premises are presupposed and left unexpressed as they go without saying. Advancing them in full word would be superfluous and hence inefficient, as it overloads speech and can even irritate the hearer if in the argumentation all sorts of things were advanced explicitly that the listener was already well aware of or could work out for himself. Nonetheless, certain elements are sometimes with less noble intentions omitted while the speaker behaves as if they were self-evident while something that has been presented as self-evident need, of course, not always be so. (van Eemeren & Grootendorst 1992: 141)

In our E-on bill, it cannot be said whether the omitting has been *intentional or not*, but its consequences are no doubt harmful for the interlocutor. Not explicitly mentioning what GD 1043/2004 implies, the consumer is not alerted on the fact that, in case he is subjected to service shut off, he will be demanded a two-year deposit which amounts to the equivalent of 300 cubed metres of gas (around 100 euro).

Also justified by the fact that the GD 1043/2004 regulations have already been listed on the contract, E-on hold that they can afford to mention *en passant* the governmental decision on the bill, taking for granted that the consumer already knows what it implies.

Having instead expressed the GD 1043/2004 regulations explicitly, would have

implied that they weren't treated as information already stored in the knowledge of the addressee, but as new information. But having treated the information as unknown to the hearer goes against E-on's interests as our attention is generally much more stimulated by new information than by old ones.

Smuggling in unknown content by means of presuppositions has the advantage (for the speaker) of making new content appear less flashy. The use of an obscure formulation such as GD 1043/2004 has the communicative effect of creating a smokescreen round the deposit. But let us not forget that the communicative function of a bill is that of informing consumers on their payment obligations and possible risks they meet with in case of non-payment. All this makes the use of presuppositions in informative texts possibly even more detrimental than in other types of contexts.

As a matter of fact, in contexts where precision is not of primary concern, using vague formulations does not damage anyone. Clearly, though, there are other contexts (like financial contexts) where knowing the exact amount is extremely relevant. Channell makes a distinction between contexts where vagueness by means of approximation is tolerated and even encouraged by listeners (informal contexts where too much information doesn't contribute in any way to listeners understanding) and contexts which demand the use of precision and in which being told exact numbers, does get the addressee further (such as stock market reports; radio programs whose purpose is to inform listeners the usual prices of consumer goods; economic newspapers). Utility bills represent another context where full explicitation is not seen as overinformative, but on the contrary, it is required in order to ensure readers' full understanding.

To E-on's possible counter-argumentation '*Ignorantia juris non excusat*', one could reply that there are so many governmental decisions that no conscientious citizen (or even a conscientious legislator, lawyer, or judge) could possibly know what they require. *Repetita iuvant* and on this basis one is justified to require more precision from E-on, although this implies being repetitive and seemingly violating economy principles.

NOTES

i. (Channell 1994:178)

ii. Constancy under negation is one of most common linguistic tests to identify presuppositions. It checks whether the presupposition of statement remains

constant (i.e., still true) even if the statement is negated. Let's take for instance the following statement 'Anne's dog is cute' where it is presupposed that Anne exists and that she has a dog. If we instead negate the statement, like in 'Anne's dog is not cute', the same thing holds true, that is, it still presupposes that Anne exists and she has a dog.

iii. In case of service terminated for non-payment, besides the re-connect tax, a utility service provider may also charge a deposit to turn back on the service.

iv. Governmental Decision

v.

vi. Truth be told, GD 1043/2004 regulations are specified on the contract (but not on the bill). Hence E-on can be seen as having attempted to inform the consumer on this issue at the moment of signing the contract. Nonetheless, considering that users are known to sign contracts without a prior detailed reading of each section of the contract, we can say that there is no real attempt to establish shared knowledge between the two parts from E-on's side. Moreover, the fact that E-on did not repeat such regulations on the bill (which is the only informative act the consumer is known to consult for payment clarifications), and did nothing but simply referred to the governmental decision as if the consumer were already familiar with its regulations, cannot be seen as an attempt from E-on to establish shared knowledge between the two parts.

vii. i.e. that the deposit consists of 300 metre cubed gas, which amounts to approximately 100 Euro and that the deposit will be returned to the consumer two years after.

viii. Hardy (2003) applies the concept of marked presuppositions in the field of narration analysis and characterizes marked presuppositions as presuppositions 'in which the narratee or listener does not share background knowledge signalled by the narrator or speaker.

ix. Romanian currency

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ISSA Proceedings 2014 - Two Kinds Of Arguments From Authority In The Ad Verecundiam Fallacy

Abstract: In this paper, an argumentation scheme for argument from an administrative authority is formulated along with a matching set of critical questions used to evaluate it. The scheme is then compared to the existing scheme for argument from expert opinion. The hypothesis is explored that it is the ambiguity between the two types of authority that is the best basis for explaining how the fallacy of appeal to authority works.

Keywords: administrative authority, argument from authority, argument from expert opinion, *argumentum ad verecundiam*, Bocheński, deontic authority, epistemic authority, Locke.

1. Introduction

There is now a considerable literature, both in argumentation studies generally and in artificial intelligence research on argumentation, on argument from expert opinion. This form of argument was traditionally categorized as an informal fallacy by the logic textbooks, but in recent years a revolution has taken place,

and it is now regarded as a legitimate argument. It is nevertheless a dangerous one that can go wrong in some instances and be quite deceptive as a rhetorical tool for strategic maneuvering in argumentation. Hence we have the problem of distinguishing between the fallacious and non-fallacious cases. When this form of argument is legitimate, it is important to recognize its defeasible nature. It provides the user only with presumptive reasoning for accepting the conclusion, subject to further investigations and to critical questioning. Through the studies of this form of argument in the recent literature, we now have a pretty good idea of how it works as a defeasible argument, and we even have formal and computational argumentation systems that have been built in artificial intelligence and that can accommodate argument from expert opinion as a standard form of argument.

Given that it is widely recognized that this type of argument can also be fallacious however, there remains more work to fully explain the fallacy or fallacies involved in it. What has been suggested is that the fallaciousness is linked with the notion of authority, since the argument from expert opinion has long been traditionally linked to the notion of authority and textbook treatments of the fallacy, and a few authors, as we shall see, have distinguished between argument from an expert opinion, and argument from appeal to authority of a different sort, resting on a notion of deontic or administrative authority.

In this paper, an argumentation scheme for argument from an administrative authority is put forward along with a matching set of critical questions that can be used to evaluate it. This scheme is then compared to the existing scheme for argument from expert opinion, and the hypothesis is explored that it is the ambiguity between the two types of argument that is the best basis for explaining how the fallacy of appeal to authority takes place.

2. The scheme for argument from expert opinion

The most basic version of the argumentation scheme[i] for argument from expert opinion is given (Walton, Reed & Macagno, 2008, p. 310) as follows.

Major Premise: *Source E is an expert in subject domain S containing proposition A.*

Minor Premise: *E asserts that proposition A is true (false).*

Conclusion: *A is true (false).*

An argument from expert opinion should be evaluated by the asking of six basic critical questions.

Expertise Question: How credible is *E* as an expert source?

Field Question: Is *E* an expert in the field *F* that *A* is in?

Opinion Question: What did *E* assert that implies *A*?

Trustworthiness Question: Is *E* personally reliable as a source?

Consistency Question: Is *A* consistent with what other experts assert?

Backup Evidence Question: Is *E*'s assertion based on evidence?

If a respondent asks any one of the six critical questions, the original argument defaults unless the question is answered adequately. Once a question has been asked and answered adequately, the burden of proof shifts back to the questioner to ask another question or accept the argument.

The explanation for the traditional informal fallacy of the *argumentum ad verecundiam* given in (Walton, 1997) is that it is hard for a layperson in the field of knowledge to critically questioning an expert, or the opinion of an expert brought forward by a third party, because a claim based on expert opinion is so powerfully supported by this form of argument that in fact it may be hard, or even appear inappropriate, for a questioner or to raise doubts about it. Thus the clever sophist who appeals to argument from expert opinion in a forceful way may be abusing what should be regarded as an essentially defeasible form of argument that should always be open to critical questioning, collection of further evidence and potential revision.

Any discussion of arguments from authority must take as their starting point the passage on this subject from Locke's *Essay Concerning Human Understanding* quoted in Hamblin (1970, pp. 159-160). This passage is widely taken to be the origin of the recognition of the informal fallacy called *argumentum ad verecundiam*, and it offers an explanation of why and how arguments from authority can be fallacious. Locke starts from describing a general mechanism of establishing authorities in the social sphere:

The first is, to allege the opinions of men, whose parts, learning, eminency, power, or some other cause has gained a name, and settled their reputation in the common esteem with some kind of authority. When men are established in any kind of dignity, it is thought a breach of modesty for others to derogate any way

from it, and question the authority of men who are in possession of it (Locke, 1836, p. 524).

We may here observe that the idea of associating *ad verecundiam* fallacy with the broader notion of authority (which is definitely not restricted exclusively to fallacious arguments from expert opinion) is not only well rooted in the philosophical tradition, but it may constitute the rationale for the systematic study of arguments basing on authorities. Since Locke clearly points to a variety of authorities involved in the *ad verecundiam* technique, we may note that one should not tailor the study of *argumentum ad verecundiam* to arguments from expert opinion. On the contrary, by claiming that 'some kind of authority' may be related to 'learning, eminency, power', Locke is rather pointing to the broader social mechanisms of employing authorities related not only to 'learning' (cognitive or epistemic authorities), but also to 'eminency' and 'power' (deontic or administrative authorities). It may be a matter of some interest that this original broad notion of authority related to *ad verecundiam* arguments was – to some extent – left aside in the study of argumentation which focuses mostly on only one aspect of *argumentum ad verecundiam*, i.e. on the fallacious appeals to expert opinion (Copi & Cohen, 1990, pp. 95-96; Hurley, 2003, pp. 130-132).

In what follows in this much quoted passage, Locke explains that when a man has a reputation showing that he is high in the common esteem and is recognized as an authority, any other man who does not readily yield to the opinion of this man is looked upon as insolent. Anyone who backs his argument with the pronouncement of such an authority thinks the opinion cited ought to be final, and considers anyone who questions it to be impudent.

This explanation of why arguments from authority, especially the ones classified as arguments from expert opinion, can so easily and so often be fallacious. A fallacy can be defined as deceptive argument used as part of strategic maneuvering by means of which one party in argumentation is employing a clever tactic to get the best of his or her speech partner party unfairly. But what kind of strategic maneuvering is involved in the fallacious use of expert opinion? Moreover, it seems possible that there can be other kinds of argument from authority than specifically argument from expert opinion type of appeal. Could somehow the fallacy be linked with the ambiguity or confusion between two different types of argument both coming under the general heading of authority?

3. *Two kinds of authority*

One theory offered to explain how the traditional informal fallacy of argumentum ad verecundiam (appeal to authority) works is that of Walton (1997, pp. 252-52). *Verecundia* literally means modesty, but it is linked to authority through the idea of intimidating an opponent by citing a respected authority. According to the Walton theory (1997, p. 250), the fallacy resides in the confusion between two different types of appeal to authority. One is the appeal to a cognitive authority in which an argument from expert opinion is put forward, while the other is that appeal to a different kind of authority, for example in a case in which one might cite a religious authority, or the authority of an administrator who makes decisions about public policy. The second kind of authority is called administrative authority in (Walton, 1997, p. 76), in contrast with the other type of authority called cognitive authority. It can be easy to confuse these two kinds of authority. For example a physician may make a claim based on his or her medical knowledge and knowledge of the circumstances of the case in offering a patient advice on which kind of medication is appropriate, or on conveying factual medical knowledge to the patient. This kind of case is classifiable as an argument from expert opinion. However the same physician might reach a decision that an elderly person is no longer fit to possess a driver's license because of some medical condition that she has that prevents her from being a safe driver, and therefore revoke this person's driver's license. This kind of case is an instance of the exercise of administrative authority, because it is the professional standing of the doctor as a licensed physician that makes his ruling authoritative. That doesn't mean his ruling cannot be questioned, but nevertheless it does mean that it has a certain authoritative basis backing it up. It is not difficult to see that in cases such as these kinds, it is very easy to conflate the two types of appeal to authority together, and therefore it can also be used in some cases to get them mixed up, with results that relate to the fallacy of argumentum ad verecundiam.

It is helpful in this regard to revert to a distinction made in (Bocheński, 1974, p. 71), where two types of authority were distinguished. An epistemic authority is said to be an expert in a field of knowledge. Deontic authority is typified by the kind of military case in which a superior commander gives orders on what should be done in specific circumstances. To illustrate the ease with which these two types of authority blend together in specific cases, Bocheński (1974, p. 71) offers the example of the professor who is an epistemic authority for his student, but is at the same time a deontic authority concerning the procedures governing the

operations of a laboratory.

On this basis it is useful to draw broad distinction between two types of authority, each of which has different kind of justification. The cognitive or epistemic type of authority is invoked where the agent making the claim is an expert in a field of knowledge. It is on the basis of her mastery of this field of knowledge, given her justified title of being an expert in that field, that her pronouncement has greater authority than that of someone who is not an expert in that field. The ultimate justification supporting an argument based on this kind of authority is that the expert has knowledge in the field of her pronouncement, and therefore if she puts forward a claim, it is supported by that knowledge.

The difference between the two types of authority can only be brought about precisely by interpreting how each of them is used as a speech act in a dialectical exchange between two parties. Budzynska (2010) has shown the basis for this distinction by describing the speech acts appropriate for the use of argument from administrative authority as follows. Putting arguments from administrative authority into the speech act framework results in the following argumentation scheme:

X performs $F(A)$

X is authorized to perform $F(A)$

—————

A

Since the sources of this authorization do not lie in cognitive skills or knowledge, there is a need of seeking for a proper model which would describe and explain most typical communication phenomena related to such arguments.

The problem here is that the administrative type of appeal to authority typically seems like it should be less open to critical questioning than the epistemic type of appeal to authority. Therefore if there is some confusion about which category a given appeal to authority should fall into, it may be easy to treat an argument from expert opinion as though it were based on an administrative appeal to authority. Hence there is a normal tendency for the recipient of the argument to be overly intimidated by it, and to presume that it would be inappropriate to raise critical questions about it. So the fallacy in such a case resides in the reaction of the recipient to such an argument, but it may also arise from the way the

proponent of the argument puts it forward. The proponent may presume, or even state explicitly, that the respondent has no right to question the argument from authority at all. In the most characteristic instances of the argumentum ad verecundiam (Walton, 1997) the person to whom the argument was directed is intimidated by what he takes to be the apparent authority of the speaker. Hence the hypothesis put forward in (Walton, 1977, p. 252) is that one of the most common kinds of cases in which an appeal to authority is fallacious is one in which the appeal to administrative authority is put forward in such a way that it appears more conclusive, and hence less open to critical questioning, than can be justified by the circumstances of the case. It is also noted in (Walton, 1977, p. 252) that this particular fault often co-occurs with cases where an appeal to epistemic authority is confused with an appeal to administrative authority.

4. The scheme for argument from administrative authority

Administrative authority is a more difficult to specify with precision than the authority of expert opinion, but we can lay out the basis of its justification as follows. Let's consider the example of the minister, or some civil official authorized to conduct the marriage ceremony, who makes the pronouncement that a particular couple are now officially married. Once he makes this pronouncement, the couple are at that moment legally married, subject to certain exceptions. For example if it is found that one of them was already married, that would nullify the standing of the present pronouncement. Another example is the pronouncement of a judge who has arrived at a decision on the outcome of a trial, let's say a criminal trial or civil trial. Such a decision is final in some ways. For example in a criminal trial there is double jeopardy, meaning that the same defendant cannot be tried for the same crime twice. Even so, the finding of a criminal trial is subject to review in some cases, and a retrial can be ordered, for example if it was found that certain evidence was overlooked in the first trial that might have made a significant difference to its outcome.

Let's say then that we can define the notion of administrative authority clearly enough so that we can recognize one when we are confronted with what seems to be one. On this basis we can define a form of argument that is not characteristic of argumentation in epistemic reasoning, where the premises are put forward to support the claim that the conclusion is true or false. Instead, they argue from administrative authority is a practical kind of argument used in deliberations on deciding what to do in a situation requiring a choice. In this framework of use, the

following argumentation scheme can be advanced to represent a form of argument from administrative authority.

δ is an administrative authority in institution Ω .

According to δ , I should do α .

Therefore I should do α .

One could now ask whether this general scheme is indeed capable of explaining the mechanism of arguing by means of directives. In order to give an answer to this question, let us discuss an example of directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community (18.07.2008). The point 27 states that:

Implementation of the provisions on the interoperability of the rail system should not create unjustified barriers in costbenefit terms to the preservation of the existing rail network of each Member State, but must endeavour to retain the objective of interoperability.

When reconstructing the general mechanism of arguing by means of directives we may point to the following scheme:

Premise 1: The EU official is an administrative authority in EU.

Premise 2: The EU official says: The EU directive 2008/57/EC should be obeyed by each Member State.

Premise 3: The EU directive 2008/57/EC states that the rail system should not create unjustified barriers to the preservation of the existing rail network of each Member State.

Conclusion: The rail system in your country should not create unjustified barriers to the preservation of the existing rail network of each Member State.

Matching the scheme is a set of basic critical questions that can be used by the person to whom the argument is directed as a device to raise doubts about whether the argument holds a given instance.

CQ1: Do I come under the authority of institution Ω ?

CQ2: Does what δ says apply to my present circumstances C ?

CQ3: Has what δ says been interpreted correctly?

CQ4: Is δ *genuinely* in a position of authority?**[ii]**

These are not the only critical questions that can be asked, but they are useful ones that can provide guidance to someone who is presented with an argument from administrative authority, and has doubts about it, but can't think of a suitable reaction on the spot.

Now we are in a bit of a pickle, because it seems from our earlier remarks that the best hypothesis might be best to classify both the epistemic type of argument and the deontic or administrative type of argument as two subcategories of the more general category of appeal to authority. But the term 'authority' is specifically mentioned in the argumentation scheme for argument from administrative authority, and in the first and the fourth critical question as well.

The above initial list of critical questions for arguments from deontic authority may be further developed by discussing some more specific problems and ideas related to the notion of authority. In what follows, we propose some more detailed critical questions which point specifically to the need of distinguishing epistemic and deontic authority in argumentation.

Let us think of a situation where someone (e.g. a principal or commander) is definitely not an epistemic authority for the employee (e.g. because of his or her lack of knowledge in a given field), but he or she wants to be an authority for the employee. Hence, he or she gives such orders which are aimed at stressing the relationship of deontic) authority. This example points to the need of asking a kind of critical question which could turn out to be instructive for identifying possible confusions of two main types of authority: epistemic and deontic. For instance, such an ambiguity of 'authority' or 'authorization' may be noticed in the case of arguments which are in line with the scheme discussed in (Koszowy, 2013; Koszowy and Araszkiewicz, 2014):

δ is authorized to perform directives.

δ says A.

A belongs to assertives.

—————
A should be accepted.

This example shows that the next two critical questions could be added to our list:

CQ5: Is δ deontic rather than epistemic authority?

CQ6: Did δ perform a directive rather than an assertive?

Another problem related to the distinction between epistemic and deontic authority concerns unjustified transitions from epistemic to deontic authority. Since epistemic authority does not have to entail any competence to formulate directives (Bocheński, 1974, p. 263), the typical fallacy rests on extrapolating authority from the set of assertives to the set of directives. Hence we may formulate the next critical question:

CQ7: Does someone claimed to be an authority utter assertives or directives? (Koszowy and Araszkiewicz, 2014, p. 292).

As we may notice, these additional critical questions (CQ5-CQ7) point directly to the need of elaborating such procedure for evaluating arguments from authority which would take into account (i) the distinction between appeals to deontic or epistemic type of authority (CQ5), and, consequently, (ii) the distinction between the two domains of authority, i.e. assertives and directives (CQ 6 and CQ 7).

In our view, the set of critical questions proposed in this section should be rather treated as an open list which may be further enriched by some other detailed considerations regarding procedures for evaluating arguments basing on deontic authority. However, it may serve as a general framework for developing such procedures. Once this list of critical questions determines the main criteria which would allow us to identify fallacious arguments which correspond to the scheme for argument from administrative authority, we may now turn to the question regarding their fallacious nature.

5. *Why are arguments from authority fallacious*

Locke made no attempt to define the concept of authority. A later writer, Richard Whately, in his *Elements of Logic*, did distinguish between two senses of the word 'authority'. To illustrate the meaning of this word used in its primary sense, he offered (1870, p. 194) the example of correcting a reading in a book on the basis of an ancient manuscript, based on the authority of the historian. This meaning of the term authority seems like it mainly referred to expert opinion, but it could also partly refer to the authority of tradition. Whately (1870, p. 194) also refers to another sense of 'authority' when the word is employed as equivalent to the word 'power', for example when we speak of the authority of the magistrate. He writes that this kind of appeal to authority is a claim to obedience. It would appear that Whately is distinguishing between two senses of authority, an epistemic kind of authority typical of appeal to expert opinion, and an administrative kind of

authority, which commands obedience and represents and exercise of power, for example judicial power, institutional power or military power.

However, one interesting aspect of it for our purposes here is that it introduces the notion of deference. Authorities command deference, on this analysis, and this psychological phenomenon that people confronted with appeals to authority tend to defer to them, not only ties in with Locke's analysis of the fallacy, but seems like it should be part of a good explanation of why this kind of argumentation becomes fallacious in some instances. The proponent of such an argument expects deference, and may often or even normally be expected to get it, so that if the respondent to the argument tries to question it, he may find that his critical questions are simply dismissed, either by the proponent or by the wider audience following the argumentation. What is clearly brought out in Hansen's explication (2006, p. 326) of Whately's remarks on deference in the *Elements of Rhetoric* is that deference is a psychological notion that depends on personal feelings. Such a remark ties in with recent work on the power of appeal to authority in the social sciences, which has emphasized that a certain type of personality is prone to accepting the pronouncements of a source who seems to be authoritative without questioning them. This psychological analysis could help to explain why appeals to authority of any kind, whether epistemic or administrative or both, tend to have is such a strong power, and can tend therefore to be associated with fallacies. If the respondent to an argument has a tendency to defer to it, that certainly may be the main reason why he or she fails to critically question it in a situation where critical questioning would be appropriate and useful.

6. Conclusion

The recognition of argument from administrative authority as a distinctive type of argumentation scheme in its own right provides some support for the hypothesis of (Walton, 1997) that the fallacy arises from the ambiguity and confusion between the two types of argument, the argument from expert opinion and the administrative appeal to authority. Moreover, the administrative appeal to authority is an important form of argument in its own right, and it will prove useful to have an argumentation scheme representing this type of argument. But still the question of why either of these kinds of arguments are fallacious in some instances has not been entirely answered. Even though in logic textbooks the most common cases cited as instances of the fallacy of *ad verecundiam* are overwhelmingly instances of argument from expert opinion, in some instances the

argument from administrative authority could potentially be fallacious in its own right. However, it is not too hard to see why this kind of argument is hard to question in many instances, and is therefore susceptible to fallacious misuse. Obviously, there are penalties for failing to obey a command made by an administrative authority who has power over you, such as your boss or a representative of the police or the government (Goodwin, 1998).

It is interesting to note that some of the classic cases of argument from authority combine argument from expert opinion with argument from administrative authority. One of the classic kinds of cases is that of a patient who visits her doctor and who has difficulty critically questioning the information or advice that the doctor is giving to her. She is not an expert, and because she is somewhat intimidated by physicians, and worried about her situation, and therefore having to rely on physicians, she has difficulty not only trying to ask the right questions but even remembering the information the doctor is trying to transmit to her. Some classic cases of this sort were studied in (Walton, 1997). In this case there is a mixture of the two different kinds of authority. The physician as a medical doctor is required to have a certifiable degree of medical knowledge appropriate for the case, but she or he also has the administrative power to tell the patient what to do or what not to do in certain circumstances, and this power often carries with it an administrative justification for actions and advice given. In studying cases, the problem here may be to differentiate between the roles of the two types of authority in the argumentation and its outcomes.

It is a promising hypothesis to conjecture that both forms of fallacy may be due simply to undue deference, even though the argument from expert opinion type of fallacy may also be due to confusion between the two types of argument. Further research could test this hypothesis on examples on each form of argument, and in cases where an ambiguity between the two types of argument could be involved.

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NOTES

i. For the conditional version of the scheme see e.g. Walton & Reed (2002, p. 2)

and Walton (2010). For a variety of contemporary (computational) methods of evaluating arguments from expert opinion see also (Walton, 2014).

ii. Thanks are due to Dale Hample for pointing out the need of including a critical question which would play a controlling role in distinguishing genuine and apparent authorities.

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ISSA Proceedings 2014 - Cognitive Science And The Model Of Emerging Truth

Abstract: This paper looks at the developing field of cognitive science showing how its epistemic power can be explained using key constructions from my model of emerging truth (MET). The MET sees warrants as tied to a field of models in definable relationships that account for the relative power of the arguments in which they are employed. The paper identifies epistemologically crucial model relationships in various strands of cognitive science accounting for its explanatory potential.

Keywords: argument, brain, cognitive science, epistemology, MET, psychology, truth, warrants

1. Introduction

This paper continues an agenda that has exercised me for more than two decades (Weinstein, 1990; 1994 are early contributions. Weinstein, 2013b is a recent sustained effort). The core of my approach can be succinctly states as follows: evaluating arguments put forward whether in defense or attack essentially

requires being able to give a comparative estimate of the strength of the warrants employed, whether tacit or overt (Weinstein, 2006). This challenges much of the theory of argument, since it precludes dialogical and dialectical considerations from being definitive, focusing rather on epistemology.

My initial agenda was practical, concerned with critical thinking across the disciplines (Weinstein, 1994, 2012b). My subsequent agenda was theoretical (Weinstein, 2009a; 2012a), resulting in a metamathematical theory of emerging truth (MET) that offered a formal account of warrant strength and the dialectics of its application to arguments (Weinstein, 2013b). The metamathematics gives formal substance to a foundational concept upon which the construction of the MET is based: the history of mappings between models of a theory over time. The MET distinguishes between two classes of models, empirical models, models of the theory in available data, and reduction models, higher order theoretic models that reinterpret a theory in terms of more abstract theories of greater explanatory power. The MET can be seen as formal metaphor for three essential and hopefully intuitive epistemological desiderata: consilience, the increasing adequacy of empirical descriptions over time; breadth, the scope of theories as applied to a range of empirical descriptions and generalizations; and depth, a measure of levels of theoretic redefinitions which results in increasing breadth and higher levels of consilience.

A crucial aspect of all the relations defined in the MET is that they permit mappings across models that are approximations (see Apostel, 1961 for a early and salient discussion of the possibilities). In the MET levels of acceptable approximation are determined by the practice in the field, but there is a requirement that approximations improve over time. Consilience requires that empirical models achieve better approximations to intended models over time, And similarly for breadth, the scope of explanations, which should increasingly approximate the range of concerns as they become apparent and depth, reducing theories should capture increasing numbers of accepted generalizations, reinterpreting them in terms of the intended models of the reducing theory. And so the MET moves from increased acceptability to emerging truth (Weinstein, 2002, 2013b).

Given the novelty of my approach, an exploration of actual cases is needed. My first application of the theory to an exemplar was an examination of a core logical moment within the development of the periodic table of elements: Prout's

hypothesis (Weinstein, 2011). Physical chemistry was the basis for my theoretic intuition and so a fit between theory and exemplar was not surprising. So I looked to an argumentative context that was far removed from physical science. I looked at the arguments that can be seen as supporting the defeat of scientific racism (Weinstein, 2013a). Unlike physical chemistry, which, at least in retrospect, can be seen as forming a unified theoretical context within which arguments can be appraised, arguments against scientific racism draw upon many theoretical points of view, including anthropological, biological, psychological and sociological perspectives. This paper presents another case: cognitive science seen as an emerging research agenda.

The application of the MET to the history of the periodic table was straightforward. The key logical relations in the MET, empirical modeling and theoretic redefinition are easy to interpret in the sort of unified theoretic complex that physical chemistry was to become. The key epistemological elements in the MET, the progressive nature of sequences of models over time and the increasing unification of empirical and theoretic generalizations through higher-order reducing theories, reflected the history of the table and so estimations of warrant strength were both natural and consistent with obvious trends in physical chemistry. No such easy interpretation was available for the network of theoretically disparate concerns found in argumentation relevant to the scientific basis for racism. But the exploration of the arguments against scientific racism highlighted another aspect of the MET, the flexibility of its model relations. The core logical relations, partial mappings across models and the tracking of such mappings over time could capture relations between disparate points of view, and the possibility of deeper theoretic unification could offer reinterpretations of empirical models drawn from different theoretical perspectives that enabled a stable and coherent platform for drawing together disparate bodies of empirical evidence. Both of these features will become apparent as we look at the developing framework of cognitive science.

2. The search for an underlying mechanism

The beginning of cognitive science can be connected with a number of distinct events (Gardner, 1987), but from our perspective two stand out. The first was the seminal paper by Warren McCulloch and Walter Pitts "A Logical Calculus of the ideas Immanent in Nervous Activity" (McCulloch and Pitts, 1943) and the publication of Noam Chomsky's *Syntactic Structures* (Chomsky, 1957). The first

of these made the connection between the work of logicians in the preceding decades and the growing interest in neuropsychology, resulting in part from the increase of neurological trauma as a result of WWII (Gardner, 1987, p. 22). The second responding to the obvious inadequacy of behaviorist accounts of language learning and use posited a complex theoretic account of an abstract mechanism deemed potentially sufficient to ground the complex and creative use of language characteristic of human beings as a class. Further, the connection with the newly develop attempt at an abstract theory of information advocated by Claude Shannon and Warren Weaver as well as the work of John von Neumann and Norbert Weiner linking logic and cybernetics with neurological metaphors set the stage for the developments that followed. Although these various approaches had affinities in that they were all willing to use abstract logical characterizations for complex phenomena, mirroring the demand of psychologists as Karl Lashley who rejected the simple models of behavior that reflected the dominant behaviorist paradigm, each of these projects were independent in structure and method and each reflected the particular concerns that drove their progenitors (Gardner, 1987, chapter 2).

The connection between abstract models with clear affinities to logic and mathematics began to bear fruit as the computer revolution began to show the enormous power of simple ideas of computation in performing tasks that heretofore had been the function of human reasoning alone. Early on, the field that would be called artificial intelligence by John McCarthy developed computer programs that were both based on and applied to logical reasoning. The availability of computational power enabled simulations of characteristic cognitive tasks, showing 'learning' across many iterations and with complex variables (Rumelhart and McClelland, 1986; Sejnowski and Rosenberg, 1987).

This foreshadowed the central dispute concerns the underlying logic of thought as the field of cognitive science emerged. The competing perspectives were so called classical accounts, which use rule based inferential structures, as in Jerry Fodor's 'language of thought' (Fodor, 1975) and connectionism, replacing rules by a dynamic probabilistic weighting of factors, describable in physiological metaphors. Rather than changes of state as a function of a rule as in the classical account, connectionism identified states of virtual neurons as the outcomes of the states of other virtual neurons, seen as forming a network, responsive to thresholds that sum across myriad connections, by analogy with neurons in the

human brain. The first of these is clearly a computer-based metaphor and binary machines have proved powerful beyond human imagining. The logic of computation, as envisioned in the seminal ideas of logic based computer programs gave the hope that such constructions would ultimately prove effective in identifying the basic structure of human cognition. But whatever the reach, the basis was a logical construction on rules. Connectionism, drawing on developing neurological understanding, saw things in a very different way. Seen physiologically and as realized in computer models of neural functioning the connectionist account offered a very different logical image of cognitive architecture.

Arguments brought forward in attack and defense of the competing positions including deep philosophical issues, including such basic issues as the nature of status of mental representation on the competing accounts. Argument, often a priori, included 'impossibility proofs' showing that a proffered cognitive structure cannot logically account for aspects of cognitive behavior. Context determined semantic meanings seem to be unavailable in principle to classical rule-based accounts. Alternatively, 'systematicity' in language production and understanding, that is the ability to produce and comprehend variations, is easy to account for in classical approaches but seemingly intractable within connectionism (Garson, 2112 offers an overview and examples). As often the debate is based on available applications in salient areas of cognitive function. Both connectionist and classical models have been applied with some degrees of success to a number of areas of cognitive functioning, including offering different structural models of the same phenomena, as for example, aspects of language production and understanding (Thagard, 2012, pp. 60-61 offers a summary table). The argument is ongoing and not decided.

The MET gives a particular perspective on reconstructing the developing inquiry. Like the early atomic theory, cognitive science begins with deep theoretic concepts that serve as potential reducing theories for newly acquired, but relatively impoverished empirical data. From the perspective of the MET it is not surprising that theories are inadequate in many ways and the debate among proponents of competing points of view is unresolved as inquiry progresses. Taking physical chemistry as a paradigm we should expect deep theoretical metaphors that are inadequate to the phenomena, which as described is subject to both empirical and conceptual flaws (Weinstein, 2011). So, for example, in

early physical chemistry, data sets for the relative proportions of chemical components were subject to the vagaries of inadequate measurement (Scerri, 2007, p. 40). And even as measurements improved empirical models of chemical reactions could not possibly be given an adequate theoretical account until the discovery of isotopes (Scerri, 2007, p. 58). When applied to physical chemistry, the MET looks to the developing of the network of ideas over time and the interplay of empirical evidence and theoretic modeling. This exposes an essential aspect of argument that moves far beyond how argument in inquiry is generally addressed.

The perspective of the MET moves beyond argument resolution in either the rhetorical or logical sense. Certainly convincing others is an essential aspect of argument in inquiry. It creates adherents, funding and possible recognition. But being right is another thing all together. Once thought of as the purview of logical principles, methodological principles as viewed from the perspective of the MET look beyond argument structure, whether deductive or inductive and sees the satisfaction of dialogical rules to be insufficient to identify the core of an argument: the strength of the warrants in support of a claim or counter-claim. The theory of warrant that the MET puts forward moves away from the local context of argument resolution and towards that larger concerns upon which the ultimate evaluation of the arguments must ultimately turn. This is seen in the MET as the evolving strengths of the warrants that underlie a claim in terms of the evolving properties of the network within which the warrant sits. The network and its history, both actual and projected, serve as an index of the warrant's power to support inference.

And so as heated and philosophically ingenious the arguments about classical versus connectionist models in cognitive science appear, from the point of the ongoing inquiry, who is right remains to be seen. The MET tells us what to look for, and so we can evaluate where the argument has been and speculate as to where it is headed: the three properties of the MET: consilience, breadth and depth. This moves us to why, despite foundational problems and difficulties of all sorts, cognitive science is an ongoing concern.

3. Increasing the range of concerns

Breadth of concern is perhaps the most apparent characteristic of cognitive science. The *Cambridge Handbook of Cognitive Science* (Frankish and Ramsey, 2012) lists 8 related research areas that reflect different aspects of cognition,

including perception, action, learning and memory, reasoning and decision making, concepts, language, emotion and consciousness. In addition, they list 4 broad areas that extend the reach of cognitive science from human cognition standardly construed to include animal cognition, evolutionary psychology, the relation of cognition to social entities and artifacts and most essential, the bridge between cognitive science and the rest of physical science: cognitive neuroscience. Each of these is a going concern, and none of them is free of difficulties. Yet in all cases there is a sense of advance, of wider and more thoughtful articulation of theoretical perspectives that address a growing range of cognitive concerns. The MET offers a logical account of why that is a telling epistemological attribute, crucial for evaluating the structure of support that warrants confidence in the truth-likeness of the enterprise and, perhaps, its ultimate vindication as the basis for emerging truth.

Like the inquiry project surrounding the periodic table from its onset, cognitive science has a wide variety of empirical projects, reflecting the range of concerns and available theories. In chemistry it was the entire range of the physical world and its processes. Cognitive science looks to analogously comprehensive concerns, the mental life of humans, that rich competence that human beings show in their engagement with their environments, their fellows and their cultures. In order to ascertain the adequacy of the projects within cognitive science we must look to examples. The study of learning and memory as contrasted with work on reasoning and decision-making serve as indications of the progressive nature of cognitive science.

The cognitive architecture of memory, the discussion between short and long-term memory has been understood for some time. With the additional concept of working memory the model for understanding memory encoding and retrieval was in place. Elaboration and controversies still abound, but the basic physiological structures through which memory can be physically impaired have been identified. Additional details and functional analyses have been postulated, for example the distinction between declarative and episodic memory, the deepening understanding of recollection and familiarity has all been explored both experimentally and physiologically. In terms of the MET there has been a steady increase in the models of memory and elaborations that form related sequences of models each supported by empirical evidence that link models to cognitive tasks and physical deformations. The connection with brain anatomy connects different

levels of analysis in that some aspects of the cognitive tasks can be interpreted in terms of an underlying mechanisms; more detailed reductions to neurophysiological theories have been identified through fMRI studies linking visual memories with high-level visual cortical areas (see Ranganath, Libby and Wong, 2012 for a review and bibliography).

The study of reasoning and decision-making, rather than looking at basic cognitive tasks, hopefully, interpreted in physiological terms, developed from the normative model already understood in logic and probability theory. Empirical studies were focused on the contrast between the normative models and actual performance (Wason and Johnson-Laird, 1972). Formal logic, the basis for the mental models that articulated the image of reasoning under investigation was expanded to include probabilistic accounts of logical inference and which of these was the most productive arena for further studies remains an issue in the field (Oaksford and Chater, 2007). Probability theory formed the normative basis for an analogous attempt to understand errors in inductive reasoning (Nisbett and Ross, 1980) and decision-making (Kahneman, Slavic and Tversky, 1982). The need to assign weight to both probabilities and utilities in decision-making has proven to be a fruitful basis for mathematical elaboration and experimentation (Stewart, Chatter and Brown, 2006).

The MET sees a very different status for the work on reasoning and decision-making in contrast to theories of memory. There are competitive models for understanding reasoning, all of which have some evidence and capture aspects of the cognitive domain, but the theories of reasoning are at best as strong as their available empirical support. Since they are based on empirical models of behavior the warrants are generally weaker than those in memory research, which draw upon a richer theoretic basis in brain research. If the discussion of reasoning and decision making is to have the robustness of theories of memory additional work has to be done, and recent efforts, moving away from logic-based discussion of reasoning and to broader considerations show indications of deeper understanding than normative-based paradigms afford. The link is the connection between memory, emotions and the levels of commitment, whether in terms of probabilities or utilities, required to make sense of decision-making. The connection between memory and emotions was postulated as early as Freud and continues to be an active area of research (for example, Lewandowsky, et. al, 2005, 2012). And there are attempts to conceptualize cognitive function within a

knowing brain and feeling body (Damasio, 1995).

Seeing reasoning in the light of normative models, whether logical or probabilistic may seriously underestimate how the brain reasons and decides. Emotions or other biasing constraints on reasoning are more than impediments to sound practice. Cognitive science points to possibility of deep understanding, looking at cognitive functioning within the possibilities and constraints of the supporting mechanism. This has been typical of advances in all of the life sciences, and cognitive science fits the model.

Speculations as to the neural mechanisms have systemic power much greater than their evidentiary weights. We look briefly at two ambitious accounts that attempt to bridge the gap between abstract structure and physiological knowledge: Thagard and Aubie (2008) and Damasio (2010). Although speculative and very likely inadequate they offer an image of enormous potential warrant. For their enterprise, bridging between fundamental pre-cognitive processes such as physiological control and emotions to build the functional potential for memory and cognition, offers deep structural warrants supported by reliable evidence and accepted theories. Moreover their materialist assumptions point to the deep reduction to physiology, neurobiology, biochemistry and electrochemistry that an adequate theory of brain function would depend on. And this is despite the enormous gap between the simple models of neurological activity proffered and the brute facts of the living brain: 30 billion neurons making countless trillions of connections and sensitive to a wide array of known biochemical agents, with more perhaps to come. The MET tells us why this so.

4. Measures of increasing adequacy

Thagard and Aubie draw upon both neurophysiology and computer modeling. This enables both theoretic depth and the possibility of increasing adequacy, even if the latter is no more than computer simulations of simplified cognitive tasks. They cite ANDREA, a model which “involves the interaction of at least seven major brain areas that contribute to evaluation of potential actions: the amygdala, orbitofrontal cortex, anterior cingulate cortex, dorsolateral pre-frontal cortex, the ventral striatum, midbrain dopaminergic neurons, and serotonergic neurons centered in the dorsal raphe nucleus of the brainstem” (Thagard and Aubie, 2008, p. 815). With ANDREA as the empirical basis, they construct EMOCON, which models emotional appraisals, based on a model of explanatory coherence, in terms of 5 key dimensions that determine responses: valance, intensity, change,

integration and differentiation (pp. 816ff). EMOCON employs parallel constraint satisfaction based on a program, NECO, which provide elements needed to construct systems of artificial neural populations that can perform complex functions (p. 824ff. see pp. 831 ff. for the mathematical details). This points to the potential power of their approach. Computer models, even if gross simplifications, permit of ramping up. A logical basis with a clear mathematical articulation has enormous potential descriptive power as evidenced by the history of physical science.

Damasio (2010) has a similarly ambitious program. He begins with the brain's ability to monitor primordial states of the body, for example, the presence of chemical molecules (interoceptive), physiological awareness, such as the position of the limbs (proprioceptive), and the external world based on perceptual input (exteroceptive). He construes this as the ability to construct maps and connects these functions with areas of the brain based on current research (pp. 74ff.). This becomes the basis for his association of maps with images defined in neural terms, which will ground his theory of the conscious brain.

Given that much he gives an account of emotions elaborating on his earlier work, but now connecting emotions with perceived feelings. As with the association of maps and images, Damasio associates emotions with feeling and offers the following account: "Feeling of emotions are composite perceptions of (1) a particular state of the body, during actual or simulated emotion, and (2) a state of altered cognitive resources and the deployment of certain mental scripts" (p. 124). As before he draws upon available knowledge of the physiology of emotional states but the purpose of the discussion is not an account of emotions per se, but rather to ground the discussion of memory, which becomes the core of his attempt at a cognitive architecture (pp. 339ff.). The main task is to construct a system of information transfer within the brain and from the body the brain. The model is, again, mediated by available physiological fact and theory about brain function and structure. The main theoretic construct in his discussion of memory is the postulation of 'convergence-divergence zones' (CDZs), which store 'mental scripts' (pp. 151ff.). Mental scripts are the basis of the core notion of stored 'dispositions,' which he construes as 'know-how' that enables the 'reconstruction of explicit representation when they are needed" (p. 150). Like maps (images) and emotions (feelings) memory requires the ability of parts of the brain to store procedures that reactivate prior internal states when triggered by other parts of

the brain or states of the body. Dispositions, unlike images and feelings are unconscious, 'abstract records of potentialities' (p. 154) that enable retrieval of prior images, feelings and words through a process of reconstruction based in CDZs, what he calls 'time-locked retroactivation' (p. 155). CDZs form feedforward loops with, e.g. sensory information and feedback to the place of origination in accordance with coordinated input from other CDZs via convergence-divergence regions (CDRegions) by analogy with airport hubs (pp. 154ff.). Damasio indicates empirical evidence in primate brains for such regions and zones (p. 155) and offers examples of how the architecture works in understanding visual imagery and recall (pp. 158ff.).

The result of all of this is an attempt, as the title of the book suggests, to construct a brain-based theory of self, which building on what he has developed so far distinguishes three stages, the proto-self "a neural description of relatively stable aspects of the organism.... spontaneous feeling of the living body," the core self, "which connects the body to the external world through " a narrative sequence of images, some of which are feelings" and an autobiographical self "when objects in one's biography generate pulses of the core self that are, subsequently, momentarily linked in a large-scale coherent pattern" (p. 192).

Damasio like Thagard and Aubie offer speculative models that reference current physiological knowledge, rely on concepts from computer science and information theory and bypass the deep philosophical issues that are seen by many to create an unbridgeable gap between the mental and the physical short of deep metaphysical reorientation (Chalmers, 1996). Yet, whatever the ultimate verdict on these two authors, the rich program in cognitive science persists and has a strong appeal. The reason is the potential strength of the warrants, that is to say, if such models prove to be correct the epistemic force of the warrants that support them will be enormous, swamping the force of alternative approaches that rely on, for example, psychological evidence alone. This requires a more careful look at the perspective that the MET provides.

The MET determines a hierarchy of epistemic adequacy in terms of models and chains of models viewed over time. Each level of adequacy supports correlative levels of warrant strength. The level of warrant strength has consequences both for the acceptance of the theory and for its power to resist counterexamples (see Weinstein, 2013b, chapter 4 for the dialectical details and a related adaptive logic.). For a theory to have sufficient warrant to be taken seriously it must reflect

its intended models in that it either holds in the models or is increasingly adequate to the evidence it strives to explain. But the models in which it holds, whether exactly or with better approximations over time, are frequently a small set of the available concerns potentially within the scope of the theory. Looking at the history of the periodic table we find a similar pattern. Theoretic models held for small subsets of the known chemical elements and theoretic approximations to empirical data were typical. But as the research program persisted more and more chemicals were brought under the scope of explanatory models and approximations of empirical data improved as both theoretical and the experimental understanding was refined.

Given the claims of both Thagard and Aubie and Damasio to base their models on accepted facts about brain function, if proved correct, the accounts, however speculative meet the first test and so are warranted at a minimal level. That is their views capture aspects of the brain or they approximate accepted knowledge to a degree that is close enough to merit consideration. If they are close enough approximations, we look to their progress as they refine their models and as knowledge of brain function increases. If the approximations are becoming closer the speculations are seen as increasingly adequate. Adequacy in light of neurological facts is compelling and increasing adequacy is a sign of the fecundity of the theoretic approach as chains of linked models progress.

Both Thagard and Aubie and Damasio take synoptic approaches and offer models which cross the boundaries of brain functions, offering generalizable schemes for neural architecture. This shows enormous potential for breadth. Cognitive scientists who connect cognition with other brain functions, that like cognition, require and mediate information across systems (for example, physiological control and emotions) add empirically relevant models of essential brain functions, so the theory is not merely more adequate to its models, but there is an increasing range of models to which it applies. Again this is typical of the history of the periodic table and was a predictor of its potential strength as the research program flourished.

The far-ranging interests of cognitive science lend *prima facie* force to any reasonable attempt at articulating a neurophysiological account of core cognitive functions that might increasingly account for aspects of the field. The wide range of empirical and theoretic studies characteristic of cognitive science points to enormous potential breadth for anybody who gets it right, mirroring the history of

the periodic table. Physical chemistry was initially concerned with gases; over time, independent areas of studies, ultimately including the entire range of physical substances, were incorporated under the basic concept of periodicity, as the basic ideas were reorganized around theoretic advance and more adequate empirical evidence. The result is a massive unification of the entire field of physical chemistry, arguable the most successful inquiry project in human history. Whatever the challenges, the epistemic payoff of a correct cognitive science is enormous, whence the power of the field despite its many problems

Tying cognitive science to neurophysiology gives an evolving empirical basis with warrants tied to the underlying structures of physiology. Physiological understanding is increasingly grounded in foundational sciences such as biochemistry and electro-chemistry. The empirical basis is necessary but it is the foundational knowledge that ultimately has the more powerful evidentiary force. Reducing neuroanatomy to a functional neurophysiology is the pathway to physicalism. Claims within physical science have the most powerful warrants, supported by networks of evidence at the highest level of articulation and affording enormous explanatory depth. Speculative talk about c-fibers reflecting what little was known about the physical correlates for mental episodes (in this case pain) was deemed worthy of decades of philosophical discussion just because the possibility of reducing the mental to the array of physical knowledge grounded the mental firmly within the scientific worldview. Unlike much of the discussion of the mind-body problem, which was concerned with identity, the MET sees reduction through identification. The reduction relation in the MET does not seek identities, but rather tracks the reinterpretations of aspects of theories when appropriate model relations hold. As we can reinterpret more and more phenomena in terms of a more basic theory our confidence in the warrants that result increases, first as a function of the adequacy of the reduction, then the increasing depth of the reduction, the increase in theoretic adequacy in light of the reduction, the increases in theoretical reach as the various reductions mutually reinforcement refinement in theory in light of symmetries between the various theories in light of the over-arching reducing theory and finally the increase in scope across large areas of inquiry as the reducing theory captures networks of theories. It is on the basis of such a history of progress that ontological claims are warranted and is the basis for the view that scientific materialism is the most plausible candidate for what the world is really made of.

5. Conclusion

If cognitive scientists are successful in modeling cognitive behavior in terms of brain processes, and if, as is becoming more evident, a wide range of psychological processes are implicated in cognition, possible co-extensive with the range of phenomena identified with so called folk psychology, the possibility of a scientific basis for the mind becomes more than philosophical speculation. Whether cognitive scientists will succeed remains to be seen. Whether a grounding of the mental in the physical will satisfy philosophers is even more uncertain, especially as phenomenology becomes a favored perspective among philosophers. But short of a wholesale disregard of science, perhaps in the name of some heir of post-modernism, the network of concepts and generalizations that constitute cognitive science has a potential for epistemic adequacy that transcends the arguments that support particular claims. The metamathematics of the MET shows how such a network can be precisely envisioned. Analysis of actual cases indicates how complex substantive arguments may be understood.

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