

Unravelling Pragmatic Enrichment in Reasoning. Views and Theories

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Abstract

The field of pragmatics exists as a final frontier of linguistic research, since it applies and deals with context itself. Thus, the concept of pragmatics concerns itself with deriving meanings, therefore discovering hidden meanings as well, all from meta- and extra-linguistic elements that can be found in a given situation. Pragmaticians and researchers have been dealing with pragmatic interpretations of different verbal exchanges, from the emergence of philosopher Herbert Paul Grice's article titled „Logic and Conversation” (1975) - with Gricean theory acting as a fundament of pragmatics as we know it today -, all the way to more recent theories and topics such as Horn's Neo-Gricean framework regarding scalar implicatures, as well as Wilson and Sperber's Relevance Theory. This brings us to the 21st century, where Cruse (2000) tackles the topic of pragmatic enrichment in reasoning, by addressing the existing literature on similar matters, before providing an analysis of his own on the subject. We will be comparing and contrasting the views and findings of Cruse with those of researchers Blochowiak, Castelain, Rodriguez-Villagra and Musolino (2022), when tackling pragmatic enrichment and its relation to the process of reasoning. After this presentation and subsequent analysis, we will be drawing a set of conclusions which will underline the overall role and value of pragmatic enrichment in reasoning, followed by a selection of further directions of research in this particular area of study.

Keywords: *pragmatics, context, conditionals, biconditionals, pragmatic enrichment, pragmatic impoverishment.*

1. Introduction

In this paper, we aim to examine the views, theories and findings presented by various researchers in the field of pragmatics, in regards to the process of pragmatic enrichment when it comes to the reasoning capability of an individual. After introducing the main concepts that will be discussed during the course of this paper, as well as stating why this issue is of significant importance for linguists, researchers and pragmaticians alike, we will be focusing primarily on the approach taken by Blochowiak, Castelain, Rodriguez-Villagra and Musolino (2022) when addressing this particular subject. However, we shall also address other views and findings on pragmatic enrichment and compare them with those of Blochowiak,

Castelain, Rodriguez-Villagra and Musolino, before presenting our own view on the matter and concluding the examination.

2. Theoretical background

In *The Cambridge Dictionary of Linguistics*, Brown and Miller (2013: 352) state that the concept of pragmatics, in its current usage, is defined as something which is held to deal with the use of language in context¹⁴, covering the multitude of acts performed by speakers and writers in the process of language usage, the inferences by which hearers and readers can construct a rich interpretation that has the ability to go beyond what is actually said or written, the things that speakers and writers presuppose (take for granted), as well as the conventions that govern what is appropriate in particular situations.

The effects of context in regards to the meaning of a particular word may, in fact, be summarized under three headings, namely selection, coercion and modulation¹⁵ (Cruse 120). Cruse (2000: 120) states that in the case of contextual variation in word meaning, we have „ready-made bundles” of meaning, which are selectively activated by contexts, meaning that the selection process generally operates through the act of suppressing the readings that give rise to semantic clashes with the context in question. Because, at times, none of the readings of a word is compatible with the context, we typically have a triggering off of a search through any possible meaning extensions (for example, metaphor or metonymy), in order to get a reading that is compatible with the context (Cruse 120). Therefore, if a meaning extension is found, it will then become the intended meaning, thus the context has coerced a new reading (Cruse 120). Cruse (2000: 120-121) argues that selection and coercion do not exhaust all of the possibilities of contextual variation, since a great deal of variation comes across as a result of those contextual effects which do not go „beyond the bounds of a single sense” - this is called contextual modulation, and, whether the effect is that of adding or removing meaning, the two main varieties that we are dealing with in this situation are those of enrichment and impoverishment.

¹⁴ Cutting (2002: 3) identifies three types of context: the situational context (what speakers know about that which they can see around them), the background knowledge context (that which they know about each other and about the world, as well) and the co-textual context (that which they know of what they have been saying).

¹⁵ Modulation constitutes changes in the meaning of lexical items effected by context, with the meaning being either enriched or impoverished (Brown and Miller 2013: 291). This concept is extensively covered in Deirdre Wilson’s 2004 article, titled *New directions for research on pragmatics and modularity*.

Enriching a meaning, or giving it specificity is the most obvious effect of context - that of adding semantic content. (Cruse 121) Therefore, the enrichments in question come up as a consequence of the processes of inference that are, in general, no different from those processes operating more generally in the understanding of a given language. (Cruse 121) Cruse further states that there are two main types of enrichment: hyponymic and meronymic. (Cruse 121)

With hyponymic enrichment, the context may simply add certain features of meaning to a word that are not explicitly stated by the lexical item itself. (Cruse 121)

- (1) My Romanian teacher is on maternity leave. => gender;
- (2) Her brother always bumps his head when walking through the door. => height;
- (3) The tea burnt my tongue. => temperature.

We can also observe the fact that, as Cruse (ibid.) states, contextual determination may very well be to a specific kind of the class which is normally denoted by the lexical item that is employed, rather than adding a feature. Such is the case in examples (4) and (5):

- (4) I wish that animal would stop barking.
- (5) Jimmy is going well in the 1200-metres freestyle.

With meronymic enrichment, specification can constitute a part of what the lexical item that is used normally refers to, as well (Cruse 122); thus, this may very well be a definite identifiable part, such as in example (6):

- (6) The car has a puncture. => the only part of the car that can have a puncture are the tyres.

However, as Cruse (2000: 122-123) argues, context is not always meant to enrich. Context can also have the capability to impoverish meaning, if it clearly establishes the use of a lexical item in a vague sense. (Cruse 122-123)

- (7) The children formed a circle around their mother. => the children did not actually form a geometrically exact circle;
- (8) He was wearing a sort of turban. => not really a turban.

A conditional clause can be defined as a type of adverbial clause that states the condition under which a certain event will happen, with the given event being stated in a main clause. (Brown and Miller 97) The canonical conditional clause is introduced by *if* (Brown and Miller 97), such as in example (9):

- (9) If Sarah resigns, Amelia will be surprised. => *Amelia will be surprised* = main clause; Amelia's surprise will be caused by Sarah's resignation => The two clauses are combined in a conditional construction.

A conditional which is interpreted as *if and only if* can be defined as a biconditional (Brown and Miller 50).

(10) If and only if it has rained, does the flower grow. \Rightarrow *It has rained* entails¹⁶ that the flower grows and *The flower grows* entails that it has rained.

We can safely make the affirmation that conditionals and biconditionals both play a pivotal role in the process of deduction, as well as in the capability of an individual to reason, therefore contributing to the importance of this issue.

3. Blochowiak, Castelain, Rodriguez-Villagra and Musolino's views and findings

In their 2022 article titled *If and only if people were logical! The effect of pragmatic enrichment on reasoning with abstract and realistic materials*, researchers Blochowiak, Castelain, Rodriguez-Villagra and Musolino aim to find out whether pragmatic enrichment happens in the case of conditionals and, if so, under what circumstances. Thus, the researchers conducted two complementary experiments in which they manipulated the type of material that was used in reasoning (abstract or realistic), as well as the nature of the major premise (conditional or biconditional), with their results indicating that both of these factors do, in fact, affect the reasoning processes and the performance of an individual. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 2022) Overall, their findings suggest that it is only the conditionals that undergo pragmatic enrichment, though not systematically, since enrichment takes place with a subclass of realistic materials only. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 2022)

In the first section of their article, titled *Introduction*, the four researchers state that a finding from the existing literature on conditional reasoning which is well-known is the fact that people often produce and accept fallacious arguments. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 137) They also state that they intend to fill in the gap left by the understudy of the importance of the linguistic means that are used in order to formulate arguments, by focusing on the linguistic side, and more particularly, on the pragmatic derivation of the meaning of logical words used in order to form major premises in conditional reasoning. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 137)

In the second section, titled *A hypothesis of perfection of conditionals*, the researchers include a theoretical background of their own to this matter, as well as a section mentioning the previous experimental testing of

¹⁶ An entailment can be described as „the relationship between two propositions p and q so that whenever p is true, q is also true“. (Brown and Miller 154)

conditional perfection¹⁷. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 138-140) The authors state that, according to the original hypothesis, the meaning of conditionals in natural language is regularly „perfected” to biconditionals through a process of invited inference, such as in the example below where (11a) invites the inference in (11b), which leads the conditional statement to be understood as the biconditional in (11c):

(11a) *If you wash my car, I will give you \$10.*

(11b) *If you don’t wash my car, I will not give you \$10.*

(11c) *I will give you \$10 if and only if you wash my car.*

According to Blochowiak, Castelain, Rodriguez-Villagra and Musolino (2022: 138), the characterisation of the pragmatic mechanism behind conditional perfection varies, as some linguists treat the inferential move from *if* to *if and only if* as an I-implicature (Atlas and Levinson 1981; Horn 1984, 2000; Levinson 2000) and others treat it as a scalar implicature (Horn 1972; Matsumoto 1995; Van der Auwera 1997). It is Franke (2009: 241) who proposes that, in a typical context of utterance, a conditional such as the one in example (12), will get „perfected” to a biconditional because of the assumption concerning a normal course of events:

(12a) *If John leans out of that window any further, he’ll fall.*

(12b) *If John doesn’t, he will not fall.*

(12c) *John will normally not just fall out of the window.*

In the view of the authors, being able to determine whether the process of perfection of conditionals takes place constitutes an essential factor, because the meaning of conditionals is directly related to the logical schemas determining the conditions under which the inference from premises to conclusions is logically legitimate is directly related to the meaning of conditionals. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 138) For instance, (13) is an example of a valid inference scheme, the Modus Ponens (MP), while (14) is a classical example of a logical fallacy, the Affirmation of the Consequent (AC).

(13)

Modus Ponens (MP)

If P, then Q Major premise

P Minor premise

Therefore Q Conclusion

(14)

Affirmation of the Consequent (AC)

If P, then Q Major premise

Q Minor premise

¹⁷ There is a growing amount of evidence pointing towards the fact that people are sensitive to the „purely logical meanings of logical words”. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 139)

Therefore P Conclusion

If the major premise is formulated with a biconditional (IFF) instead of a conditional (IF), such as in example (11c), the Affirmation of the Consequent becomes a simple Modus Ponens - simply put, biconditionalization has the power to convert an invalid argument into a valid one. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 139)

The third section of the article is named *What matters for pragmatic enrichment of conditionals?* and here Blochowiak, Castelain, Rodriguez-Villagra and Musolino (2022: 140-143) address the concept of abstract and realistic conditionals, casual conditionals (alternative causes and disabling conditions as grounds for pragmatic enrichment), as well as the summary of their hypotheses and predictions. Usually, studies done on conditionals investigate reasoning with two types of materials. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 140) Firstly, we have abstract or arbitrary premises (containing letters, numbers or other abstract material) which are constructed and then serve as experimental items in the study, as in example (15):

(15a) If there is an A, then there is a D.

(15b) If there is a circle, then there is a triangle.

With this type of materials, it is hard to identify a relation that could link the antecedent to its consequent. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 140) Secondly, experimental items can also be created with meaningful premises, in which participants are tasked with evaluating a real-world relation between the antecedent and the consequent. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 140) The first type is occasionally referred to as „basic conditionals” and the second type „thematic conditionals”. (Evans, Ellis and Newstead 1996) The most common thematic conditionals are causal and deontic conditionals (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 140), such as in examples (16a) and (16b):

(16a) If you turn on the radiator, then you will feel heat.

(16b) If you do your homework, then I will let you go to the movies.

According to Blochowiak, Castelain, Rodriguez-Villagra and Musolino (2022: 141), a whole line of research on the topic of causal conditional reasoning, stemming from seminal work conducted by Cummins (1995), has demonstrated the importance of the type of causal link contained in the major premise in causal conditional reasoning (also called naïve causal deduction). This type of deduction constitutes a form of reasoning in which participants draw conclusions about the occurrence of a cause or an effect on the basis of a conditional (also called conditional rule) describing a causal link between two events or two types of events. (Blochowiak, Castelain,

Rodriguez-Villagra and Musolino 141) The examples below are taken from Cummins (1995: 648) and they help illustrate this type of reasoning:

(17)

If the brake was depressed <<cause>>, then the car slowed down <<effect>>.

=> Major premise

The brake was depressed <<cause>>. => Minor premise

Therefore, the car slowed down <<effect>>. => Conclusion

(18)

If the brake was depressed <<cause>>, then the car slowed down <<effect>>.

=> Major premise

The car slowed down <<effect>>. => Minor premise

Therefore, the brake was depressed <<cause>>. => Conclusion

The three main hypotheses concerning the pragmatic enrichment of conditionals and their respective predictions can be summarized by Blochowiak, Castelain, Rodriguez-Villagra and Musolino (2022: 143) as follows:

Hypothesis 1: Endorsers-Rejecters split is present only with abstract materials regardless of IF and IFF.

Prediction 1: Difference in Acceptance rate of the conclusion of AC between Endorsers and Rejecters is expected to be observed in the Contentless experiment for IF and IFF.

Prediction 2: Difference in Acceptance rate of the conclusion of AC between Endorsers and Rejecters is not expected to be observed in the Contentful experiment, whether it is for IF, or for IFF.

Hypothesis 2: Pragmatic enrichment of IF happens only with realistic materials.

Prediction 3: Pragmatic enrichment expected only in the Contentful experiment: a difference of Reading time and Acceptance rate between IF and IFF will be present.

Prediction 4: No differences in terms of Reading time between IF and IFF in the Contentless experiment.

Hypothesis 3: Pragmatic enrichment of causal IF occurs with few counter-examples.

Prediction 5: In the case of IF, longer reading times on the minor premise in AC_{few} compared to AC_{many} condition are expected.

Prediction 6: In the case of IFF, longer reading times on the minor premise in AC_{few} compared to AC_{many} are not expected.

The fourth and largest section of the article, titled *Experimental investigation* (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 143-154), sees the implementation and subsequent evolution of both the contentless and the contentful experiment, each one of them describing the materials, participants, procedure, as well as the results, which in turn contain

descriptive statistics, the reasoning style, acceptance rate and reading time of the minor. The contentless experiment also contains a subsection on data treatment and statistical methods. Both experiments end with a section discussing the results. Afterwards, the researchers address the contentless vs contentful experiment, containing the results and, similar to previous experiments, a section discussing these particular results. The experimental investigation that was conducted shows acceptance rates for conclusions in abstract and realistic materials point to the fact that overall, reasoners accept more conclusions in AC-type configurations when the reasoning is performed on abstract compared to realistic materials. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 143-154) We can also observe significantly higher acceptance rates of AC conclusions when the major premises were formulated with IFF compared to IF, with this difference being present in realistic but not abstract materials. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 143-154) These findings confirm Blochowiak, Castelain, Rodriguez-Villagra and Musolino's (2022: 154) hypothesis that the pragmatic enrichment of conditionals „is to be expected in reasoning with realistic materials, as in the case of causal naïve deduction”.

The fifth and final section of the article is titled *General discussion and conclusion* (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 154-156) and contains the final thoughts and views of the linguists in the respective piece of research. Two main dissimilarities between reasoning with abstract vs realistic materials have been shown. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 156) Firstly, the Endorsers-Rejecters split was observed in abstract but not in realistic reasoning and, secondly, differences between the two linguistic formulations of the major premise (IF vs IFF), observed both in accuracy and reading time, were only present while participants performed reasoning with realistic materials. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 156) Concerning the process of pragmatic enrichment, the findings in the article are compatible with the hypothesis that such process cannot be present in reasoning with abstract materials because the presence of meaningful information is a necessary element „for reasoners to gauge the relevance of pragmatic enrichment”. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 156) The authors go on to state that realistic reasoning encouraged participants to enrich conditionals with few counter-examples, whilst no enrichment has been found in abstract reasoning. (Blochowiak, Castelain, Rodriguez-Villagra and Musolino 156)

4. Other takes on the topic of pragmatic enrichment - Cruse (2000)

When it comes to the topic of pragmatic enrichment, the takes of prominent linguists and researchers in the field of pragmatics, such as Brown, Miller, Cutting and Cruse have mainly been addressed during the second section of this paper. Even when addressing the research put forward by Blochowiak, Castelain, Rodriguez-Villagra and Musolino, we touched up on certain views from Atlas, Levison, Cummins, Franke, Horn and many other linguists. There are, however, certain additional aspects that we will state in the course of the present section of the paper.

Cruse (2000: 352) puts forward a notion according to which the proposition or propositions which form the explicature are not fully encoded in an explicit linguistic form, meaning that the information conveyed by the overt linguistic form of the utterance needs to be supplemented by processes of completion and/or enrichment. The process can be demonstrated through the following examples:

(19) A: What time is your plane?

B: 12.45.

In order to retrieve the explicature of B, we need first of all to fill out his utterance to something along the lines of:

(20) My plane takes off at 12.45.

This is closer to a prepositional form and we can call the process which leads to it completion, but more is required than this. (Cruse 353) Sentence (20) contains the definite referring expressions *my plane* and *12.45* and before the expressed proposition can be identified, referents in the extralinguistic world must be assigned to these expressions. (Cruse 353) The expression *my plane* refers to some specific air service, and *12.45* refers to a particular time (either a.m. or p.m.) on a specific day. Therefore, supplying this extra information involves enrichment. (Cruse 353)

We believe that enrichment is an essential component when researching or analysing language through a pragmatic scope, in no small part due to the power that this notion possesses- the ability of giving and/or taking information to and from an individual, all in concordance with the context, which is yet another factor that has proven itself to be of great value in this area of linguistic research.

Conclusions

To conclude this paper, we can, without a doubt, say that pragmatic enrichment in reasoning is a complex process, a process that requires further research not only due to its fundamental - both linguistic and philosophical-

complexity, but also due to the importance of understanding the *hows* and the *whys* of the subject which has been examined and addressed by us, as well as by many other prominent researchers in the field of linguistics, as we have seen during the course of this paper. This, of course, constitutes a vital and necessary step towards a better understanding of the human mind, but also of language and thought as reflections of it.

Further directions of research *may* include, though they are not limited *to*, the following: collecting a corpus of verbal exchanges to analyse, a diachronic study of pragmatic enrichment across the years (from the earliest research to the most recent), but also a more in-depth look into the concept of cognition from a pragmatic perspective, especially when discussing reasoning. As stated before, these examples that we have given (and many more) can very well contribute to a better understanding of language and the part that it plays when understanding the human mind, since context is extremely important in pragmatic research and also acts a vital component to an accurate interpretation of the collected data.

Bibliography

- Atlas, J. D., Levison, S. C. „It-clefts, informativeness and logical form: radical pragmatics”. Cole, Peter (ed.) *Radical Pragmatics*, Cambridge, Massachusetts: Academic Press, 1981.
- Blochowiak, Joanna, Castelain, Thomas, Rodriguez-Villagra, Odir Antonio, Musolino, Julien. „If and only if people were logical! The effect of pragmatic enrichment on reasoning with abstract and realistic materials”. *Journal of Pragmatics* 197: 137-158, Amsterdam: Elsevier, 2022.
- Brown, Keith, Miller, Jim. *The Cambridge Dictionary of Linguistics*, Cambridge: Cambridge University Press, 2013.
- Cruse, Alan D. *Meaning in Language. An Introduction to Semantics and Pragmatics*, Oxford: Oxford University Press, 2000.
- Cummins, D. D. „Naive theories and casual deduction”. *Memory and Cognition* 23 (5): 1638-1655, Berlin: Springer Science and Business Media, 1995.
- Cutting, Joan. *Pragmatics and Discourse*, London: Routledge, 2002.
- Deidre, Wilson. „New directions for research on pragmatics and modularity”. *Lingua* 115: 1129-1146, Amsterdam: Elsevier, 2004.
- Evans, J. S. B., Ellis, C. E., Newstead, S. E. „On the mental representation of conditional sentences”. *Q. J. Exp. Psychol.: Hum. Exp. Psychol.* 49A (4): 1086-1114, Missouri: American Psychological Association Press, 1996.
- Franke, M. *Signal to Act*. PhD Thesis. University of Amsterdam, The Netherlands, 2009.
- Horn, L. R. *On the Semantic Properties of Logical Operators in English*. PhD Thesis. University of California, Los Angeles, 1972.
- Horn, L. R. „Toward a new taxonomy for pragmatic inference: Q-based and R-based implicature”. In Shiffrin, D. (ed.) *Meaning, Form and Use in Context*:

- Linguistic Applications*: 11-42, Washington: Georgetown University Press, 1984.
- Horn, L. R. „From if to iff: conditional perfection as pragmatic strengthening”. *Journal of Pragmatics* 32 (3): 289-326 Amsterdam: Elsevier, 2000.
- Levison, S. C. *Presumptive Meanings. The Theory of Generalized Conversational Implicature*, Cambridge, Massachusetts: MIT Press, 2000.
- Matsumoto, Y. „The conversational condition on Horn scales”. *Linguistics and Philosophy* 18 (1): 21-60, Berlin: Springer Science and Business Media, 1995.
- Van der Auwera, J. „Pragmatics in the last quarter century: the case of conditional perfection”. *Journal of Pragmatics* 27 (3): 261-274, Amsterdam: Elsevier, 1997.