On the manifestness of assumptions

Gaining insights into commitment and emotions

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Right from the outset, relevance theory (Sperber and Wilson 1986/1995) tried to define interpretation as a process of context elaboration. Interpretation is seen as a path of least effort leading to the selection of a set of most accessible assumptions. One of the central aspects of this context elaboration process lies in the fact that contextual assumptions are not randomly scattered in the hearer's cognitive environment. Instead, relevance theory claims that there are some organising principles ordering contextual assumptions and determining which will be accessed first and, therefore, which will be retained as part of the optimally relevant interpretation.

The main organising principle is captured by the notion of manifestness, which combines two distinct properties of contextual assumptions: their accessibility and their strength in the cognitive environment. Sperber and Wilson (1986/1995) define them as a function of the processing history of an assumption for the former and the confidence with which an assumption is held for the latter.

In this paper, I will explore the explanatory potential of manifestness by putting the notions of strength and accessibility to work on two current trends in pragmatic research, namely commitment (Ifantidou 2001; Boulat and Maillat 2017, 2023; Mazzarella et al. 2018; Bonalumi et al. 2020) and emotion (Moeschler 2009; Dezecache et al. 2013, 2015; Wharton and Strey 2019; Wilson and Carston 2019; Saussure and Wharton 2020; Wharton et al. 2021). My goal will be to show how these two dimensions of manifestness, as they were developed in the very early days of RT, can provide us with new theoretical insights in the study of human communication. In this paper, I will argue that, beyond their usefulness in providing a guiding principle for the comprehension procedure, the strength and accessibility of contextual assumptions can also advantageously shed light on other phenomena like commitment and emotions.

Keywords: manifestness, strength of assumptions, accessibility of assumptions, evidentiality, commitment, emotion

1. Introduction

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It is a sure sign of the importance of a scholar's work when the books and papers they published forty years ago are still the subject of intense scrutiny and a source of inspiration for new scientific endeavours. Deirdre Wilson most certainly qualifies as such a scholar in more than one way. This paper constitutes an attempt at exploring some of the paths uncovered back in the mid-1980s, when she was working on the foundations of relevance theory, and as such, it is a modest tribute to the considerable influence she has had on my own research.

When relevance theory embarked on a revision of the Gricean programme (Grice 1989), one of the central questions that needed to be answered concerned the way an inferential theory of meaning could be kept in check and not crumble under the staggering amount of information at its disposal. Specifically, it had to explain how the pragmatic derivation could converge on an optimal interpretation and not get lost in the process.

Sperber and Wilson (1986/1995) make two fundamental claims about the nature of the information that would enter the pragmatic derivation. First, they assume that pieces of information are represented in a knowledge base – the cognitive environment – in the form of assumptions which are characterised by their respective degree of manifestness at that point in time. Manifestness, as a result, is assumed to generate an internal structure for the knowledge base. Second, they take manifestness to be captured by two properties: a cognitive factor of accessibility and an epistemic factor of strength. These two parameters are thus taken to determine the manifestness of an assumption relative to others.

While the main import of manifestness – and through it, of strength and accessibility – has been to provide a systematic structure within which the comprehension heuristic could home in on an optimal interpretation following a path of least effort, the two concepts offer far-reaching insights into other aspects of communication.

In the last decade, for example, relevance-theoretic research has focused repeatedly on issues regarding the treatment of the epistemic value of assumptions (see Ifantidou 2001; Sperber et al. 2010; Boulat and Maillat 2017, 2023; Mercier and Sperber 2017; Mazzarella et al. 2018). Other scholars have looked at non-verbal and 'non-propositional' communication (Wharton 2009; Wharton and Strey 2019; Wilson and Carston 2019; Saussure and Wharton 2020). The goal of this paper is to investigate how manifestness, through its defining properties of strength and accessibility, can help us gain valuable insights into two phenomena of human communication, namely (a) into the pragmatics of epistemic endorsement by the speaker of the information conveyed by her utterance – a phenomenon referred to as commitment – and (b) into the pragmatic effects of emotional states on communication.

First, we will look at how Gricean pragmatics has tried to both categorise the type of information that could enter pragmatic derivation and limit the

number of pieces of information that should be entertained during the derivation of meaning. In Sections 3 and 4, we turn to relevance theory and detail how it tried to address some of the issues encountered in Grice's proposal. In particular, we investigate how the complex notion of manifestness of assumptions in the cognitive environment is determined by an epistemic factor of strength and a cognitive factor of accessibility. In the next section, we put to work the first parameter of manifestness, i.e. strength, as we provide an account of epistemic commitment phenomena which tries to extend Ifantidou's (2001) framework. Section 6 focuses on a proposal to exploit the explanatory potential of the second parameter governing manifestness, i.e. accessibility, by providing complementary answers to some of the issues raised in recent relevance-theoretic work on emotions by Wharton and colleagues.[1]

2. Intentions and context

Gricean pragmatics was a decisive moment in the study of meaning as it argued for a linguistic model of meaning that did not shy away from the contextual parameters that bear on its calculation (see Grice 1989). With his notion of speaker meaning, Grice called for a radical overhaul of the linguistic account of meaning moving away from a purely decoded view of meaning interpretation to a new perspective involving inferences. With the addition of these inferential processes, Grice proposed, for the speaker, a construal of meaning elaboration driven by inferences about ways to convey her intentions by means of some verbal evidence, and for the addressee, a reconstruction of meaning driven by inferences about the speaker's intentions supported by the verbal evidence she provided in the communicative exchange. Thus, he defines non-natural meaning as follows (ibid., 220):

"A meantNN something by x" is (roughly) equivalent to "A intended the utterance of x to produce some effect in an audience by means of the recognition of this intention"; and we may add that to ask what A meant is to ask for a specification of the intended effect [...].

Of particular interest in this paper are the representations that feed into the inferential mechanisms in question. Thus, the calculation of pragmatic meaning relies crucially not only on pieces of information that are conveyed by the utterance but also on information that is contextually salient in the talk exchange and will help the hearer in his attempt to form a hypothesis regarding the speaker's intention. Levinson (1983, 113) summarises the various elements which enter the calculation of pragmatic meaning in a Gricean model in the following way:

[1] I wish to thank the participants of the Linguistics Graduate Workshop at Brighton University for their useful input and comments on an earlier version of this paper. In particular, I would like to extend my special thanks to Tim Wharton for his detailed and always spot-on feedback. This article also benefitted from the careful and insightful comments of two anonymous reviewers, and of the Editor-in-Chief Helmut Gruber. The usual disclaimers apply

i. the conventional content of the sentence (P) uttered

ii. the co-operative principle and its maxims

iii. the context of P (e.g., its relevance)

iv. certain bits of background information (e.g., P is blatantly false)

v. that (i)–(v) are mutual knowledge shared by speaker and addressee

The information conveyed by the utterance (in [i]) combines with information which is not linguistically conveyed, and which is part of the context (in [iii]) or of background knowledge (in [iv]).

Although it is not Grice's goal to establish the cognitive architecture that supports his model of verbal communication, it can be deduced from this that the inferential derivation of pragmatic meaning relies on three types of content stored in the mind in the form of representations. As should be clear from the definition above, contrary to the information conventionally conveyed by the utterance, which constitutes a finite set determined by the form of the utterance, the reference sets for contextual information and background information are of a completely different nature altogether, as they constitute – if not infinite sets – at least exponentially large ones. As a result, one of the central difficulties in an effort of this type towards an explanation of pragmatic meaning resides in the need to keep the inferential process in check.

Unsurprisingly, two other components enter the definition to ensure that the pragmatic derivation is reined in and kept under control: (ii) warrants that some guiding principles will constrain the way we will look for material in (iii) and (iv); while (v) will drastically limit the same two information sets by selecting only those representations which can be entertained by both participants in the talk exchange.

Still, even if we factor in those limiting factors safeguarding the process of inferential interpretation of meaning from an exponential explosion of possible

interpretations for a given utterance, it remains true that for a pragmatic model to achieve a sufficient degree of explanatory power, it will need to address how these different sources of information (coded conventional information, contextual information, and background information) can feed into a single inferential process. It will also have to explain how inferences can be drawn from the remaining – and still staggering – information set in some orderly fashion to provide convergence on a reasonably predictable interpretation. That is to say that a pragmatic theory of interpretative processes will need to address questions regarding the nature and properties of the information accessed and questions regarding the existence of structuring criteria in this information set. However, the original Gricean project does not provide us with a detailed view on the kind of structuring criteria which should be assumed.

The purpose of this study is to look more closely at some of the answers provided by relevance theory to solve these issues. In particular, we will focus on the theoretical cognitive properties of mental representations to explore how they could help us gain an insight into two phenomena affecting the way we communicate. In the following, we take a closer look at how relevance theory has revised the Gricean project.

3. Contextual assumptions in relevance theory

Sperber and Wilson (1986/1995) identify the problem affecting interpretative inferences in Grice's theory as what we would call a lack of convergence. They write:

> Given that an utterance in context is found to carry particular implicatures, what both the hearer and the pragmatician can do is to show how, in intuitive terms, an argument based on the context, the utterance, and general expectations about the behaviour of speakers justifies the particular interpretation chosen. What they fail to show is that, on the same basis, an equally well-formed argument could not have been given for a quite different and in fact implausible interpretation.
>
> (ibid., 699)

Indeed, in the very large information set consisting of conventional information coded by the utterance, contextual information, and background information shared by the participants in the talk exchange, it is difficult, through the sole application of the Co-operative Principle and of the Maxims, to defend why the chosen interpretation was selected over other equally available candidates (given the information set).

For instance, if we look at utterances (1) to (3), there exist several competing interpretations that could be generated with the same contextual and background information. In Example (1), the favoured ironic interpretation competes with a literal interpretation. The indirect speech act in (2) competes with an interpretation of the utterance as a genuine interrogative, while the lexical ambiguity triggered by bats in (3) could be resolved in two different ways. For instance, in the case of Example (3), the fact that when the hearer interprets the speaker's utterance, the context will ensure that one interpretation of the ambiguous term bats (say, the animal) is more salient than the equally available second interpretation (the wooden stick). In other words, the convergence of the interpretation process on the correct lexical meaning depends in part on the configuration or structure of the context set. But the mechanisms which determine the configuration of the context set are not explicated.

(1) That was nice! (said after some mishap took place)

(2) Could I have some more of this sumptuous white wine?

(3) I love bats!

In their revision of Grice's proposal, Sperber and Wilson (1986/1995) propose to ground their pragmatic model within a cognitive framework, but although the parallel between the two approaches is often analysed as a simplification of Grice's Co-operative Principle and Maxims to a Principle of Relevance, a lot of the work achieved by their cognitive approach touches on what constitutes the information set and the properties of the mental representations that populate it. In other words, relevance theory makes explicit the mechanisms which lead to a given configuration of the context set.

Thus, their account posits that interpretation is an inferential process that combines cognitive representations and combinations of these representations. That is to say that every piece of information that feeds into the derivation of pragmatic meaning consists of a mental representation stored in the cognitive environment of the hearer. In that respect, the cognitive environment subsumes the three types of information identified in the previous section (coded conventional, contextual, and background information). In this view, the cognitive environment of a person combines all the mental representations that she[2] is capable – to some degree – of entertaining and of accepting as true. These mental representations of pieces of information are called assumptions and the property required to be included in the cognitive environment, the property of being entertainable as true to some degree, is referred to as manifestness (Sperber and Wilson 2015, 134). Crucially, with this approach, coded information, contextual information, and background information receive a unified treatment and are accessible in the same knowledge base.

In this view, interpretative inferences amount to an effort on the hearer's part to select the appropriate subset of assumptions that will yield a relevant interpretation in the current talk exchange. This interpretative mechanism, in turn, is the consequence of the way (ostensive-)inferential communication is conceived of within relevance theory, i.e. as an attempt on the part of the speaker to modify the degree of manifestness of a subset of assumptions in the hearer's cognitive environment.

Ostensive-inferential communication: The communicator produces a stimulus which makes it mutually manifest to communicator and audience that the communicator intends, by means of this stimulus, to make manifest or more manifest to the audience a certain set of assumptions.

(Sperber and Wilson 1986/1995, 700)

In order to achieve this communicative purpose, the speaker will have to optimise her ostensive communicative act to the requirements of the cognitive system. According to Sperber and Wilson (1986/1995), the cognitive system is driven by an optimisation principle which seeks to improve the knowledge base

[2] Following the relevance-theoretic practice, unless an example builds a different scenario, it is assumed that the speaker of an utterance is female and the hearer is male.

at its disposal while limiting the cognitive efforts required to implement those improvements, namely the Cognitive Principle of Relevance, where relevance is, therefore, defined as a function of effects and efforts. In view of this, the speaker's communicative intent would be best served by an utterance which meets the requirements of this Cognitive Principle. In turn, this expectation is captured in the model by the Presumption of optimal relevance, which Wilson and Sperber (2012, 7) define as follows:

Presumption of optimal relevance

a. The utterance is relevant enough to be worth processing.

b. It is the most relevant one compatible with the communicator's abilities and preferences.

If we return now to the interpretative process, this will consist in selecting in the cognitive environment those assumptions that have been made more manifest by the speaker through the use of the ostensive stimulus – typically, the utterance. Crucially, for the present study, the presumption of optimal relevance which guides the inferential interpretative process essentially relies on the internal structure of the cognitive environment – specifically, on the degree of manifestness of assumptions – in order to converge on an optimal candidate. This last point is made quite explicitly in the definition of the comprehension heuristic quoted below. As should be obvious from the first component of the heuristic, interpretations are entertained in an order of accessibility, and, as a consequence, the inferential process converges on the first interpretation to satisfy the expectation of relevance and stops there.

Relevance-theoretic comprehension heuristic

Follow a path of least effort in computing cognitive effects:

a. Consider interpretations (disambiguations, reference assignments, etc.) in their order of accessibility;

b. Stop when the expected level of relevance is achieved. (Wilson and Sperber 2012, 201)

Interestingly, it is this same internal structure of the cognitive environment which can solve the problem raised earlier in Section 2 above in connection with the need for a satisfactory pragmatic model to not only pick the right interpretation, but to also rule out any competing candidate. In the present relevance-theoretic model, the exclusion of possible but implausible candidates follows from the degree of manifestness which orders assumptions in the cognitive environment of the hearer and will make other interpretations less accessible.

To recapitulate the main observations so far, we can point out that one of the central modifications brought to the Gricean proposal by relevance theory concerns the nature and properties of the information accessed during the derivation of pragmatic meaning (i.e. assumptions), as well as the existence of

structuring criteria in the knowledge base where this information is stored. In more than one way, as we have tried to argue, these notions are the driving forces of the relevance-theoretic model even though they have not often been at the centre of theoretical discussions.[3]

As stated before, the present study would like to investigate some indirect theoretical insights that can be gained from the claims made about the two properties which determine the manifestness of assumptions and about the internal structure of the cognitive environment. In the next section, we will try to obtain a clearer picture of the kinds of properties of assumptions that have been captured under the notion of manifestness.

4. Manifestness, accessibility, salience, and strength

As we saw in the previous section, the main property assumptions have in the cognitive environment is manifestness. However, as was already clear from the various quotations presented thus far, the very notion of manifestness can be confusing at times. For instance, in the definition of the comprehension heuristic presented above, the first component mentions 'accessibility', not 'manifestness', despite the fact that according to Sperber and Wilson, manifestness determines a certain order between assumptions in the cognitive environment. This calls for a closer investigation of the notion.

The first element of discussion touches on the fact that manifestness is not to be conceived of as a binary property of assumptions, but rather as a continuum on which manifestness can be realised at various degrees (Clark 2013, 115). Sperber and Wilson (1986/1995, 39) clarify this point when they write that

> we have defined 'manifest' so that any assumption that an individual is capable of constructing and accepting as true or probably true is manifest to him. We also want to say that manifest assumptions which are more likely to be entertained are more manifest.

Most importantly, by assuming degrees of manifestness for assumptions, relevance theory also establishes an ordering relation between them – since an assumption will be more manifest than certain assumptions and less manifest than others – and, as a result, postulates the existence of an internal structure within the cognitive environment at a given point in time. That is to say that the pragmatic derivation of meaning now has a means to contrast a given assumption with another that is independent from their propositional content.

For degrees of manifestness to gain any kind of explanatory power, we must be able to establish how they are determined. Although relevance-theoretic accounts of manifestness are not difficult to find, they do not always fully clarify what regulates manifestness in the cognitive environment. For example,

[3] See the following sections for some notable exceptions.

when they first introduce the manifestness continuum in their original account, Sperber and Wilson (1986/1995, 39–40, my emphasis) on the one hand provide some clear indications regarding the parameters that will have a bearing on manifestness, and on the other, conflate manifestness with two further cognitive notions, those of salience and accessibility.

Which assumptions are more manifest to an individual during a given period or at a given moment is again a function of his physical environment on the one hand and his cognitive abilities on the other. Human cognitive organisation makes certain types of phenomena (i.e. perceptible objects or events) particularly salient. [...] When a phenomenon is noticed, some assumptions about it are standardly more accessible than others.

Yet, a third cognitive concept is introduced in connection with the manifestness continuum in the account given by Clark (2013, 115, my emphasis; see also Wilson and Carston 2004), when he states that

'manifestness' is a matter of degree. We can think of assumptions as more or less manifest. If you think it's probably raining because of the sounds you are hearing, then this assumption is manifest to you. If you see the rain, it is more manifest (because better evidenced).

In this instance, manifestness appears to be conceptualised as a marker of epistemic strength since an assumption will be perceived as more manifest based on the degree of evidentiality supporting the information represented by the assumption ('better evidenced').

What can be gathered from these different definitions is that manifestness is not only meant to be understood as a graded notion but also as a complex one, made up of several more atomic concepts. From the original triple dimension identified above, later accounts reduced the number of factors constitutive of manifestness to just two properties of any piece of information stored in the cognitive environment. First, there is a cognitive factor, which is a function of the history of the assumption in the cognitive environment. Second, there is an epistemic factor, which is a function of the evidential strength of the piece of information represented by the assumption.

Manifestness depends on two factors [...]: strength of belief and salience. These factors are quite different – one is epistemic and the other cognitive – and for some purposes it would be unsound to lump them together. However, we need to consider their joint effect in order to explain or predict the causal role of a piece of information in the mental processes of an individual.

(Sperber and Wilson 2015, 133)

In a footnote to this excerpt, the authors also explain that the concepts of salience and accessibility "refer to the same property" (ibid.), which ultimately leaves us with two properties of assumptions: strength and accessibility. The respective import of both properties to the manifestness of assumptions can be illustrated with an example. Suppose Lucy has a conversation with her friends

Max and Logan about a common acquaintance, Anton.

(4) Max – Someone mentioned that Anton quit his job.

Logan – Anton swore he didn't quit his job.

In the immediately ensuing exchange, both utterances will be represented in Lucy's cognitive environment as contradictory assumptions to the effect that Anton quit/did not quit his job; but, whereas they will be sharing the same degree of accessibility since they both belong to the immediate context of the interaction, they will have different degrees of strength. While the information made manifest by Max is based on mere hearsay, Logan's information was obtained directly from the main protagonist. As a result, the information that Anton did not quit his job will be more manifest to Lucy. Now, suppose that, in a different scenario, Lucy first meets with Max, who relays the same information to her as in (4), and then, two days later, she meets with Logan, who tells her

(5) Logan – A colleague told me Anton didn't quit his job.

In this second scenario, the strength of both assumptions representing the two utterances will be equivalent as both share the same epistemic value. However, their accessibility will differ since only (5) enters the immediate context of the talk exchange in the second interaction.

What these two examples demonstrate is the kind of independent effect that both factors can have on the internal structure of the cognitive environment, and, therefore, on interpretative processes. So, even though they have often been treated together and at times confused with each other, we will follow Sperber and Wilson's (2015) advice in not "lumping them together" for the purpose of the present study, in order to work out the kind of additional theoretical insight which can be gained from the two properties of assumptions assumed in the relevance-theoretic framework. Specifically, we want to explore the explanatory potential of the two properties which determine the manifestness of contextual assumptions in capturing two phenomena in communication: commitment attribution and the effects of emotions.

5. Strength and commitment

As was discussed before, strength contributes to the degree of manifestness of assumptions as a marker of the epistemic value attributed to the assumption. Following up on studies carried out by Ifantidou (2001), Morency et al. (2008), Moeschler (2013), Mazzarella et al. (2018), Boulat and Maillat (2017, 2023), and Bonalumi et al. (2020), we will explore how this very property of assumptions is ideally suited to capture linguistic traits which have been generally studied under the category of commitment phenomena. But before we draw a parallel between strength and commitment, we must first gather a better understanding of what kind of property is covered by the notion

of strength.

It was pointed out earlier that strength corresponds to a degree on a continuum of epistemic value. As such, it is a non-logical property of assumptions which captures the way an assumption was first acquired into the cognitive environment. Sperber and Wilson (1986/1995, 77) give some details as to how the strength of an assumption might be determined:

[T]he initial strength of an assumption may depend on the way it is acquired. For instance, assumptions based on a clear perceptual experience tend to be very strong; assumptions based on the acceptance of somebody's word have a strength commensurate with one's confidence in the speaker; the strength of assumptions arrived at by deduction depends on the strength of the premises from which they were derived. Thereafter, it could be that the strength of an assumption is increased every time that assumption helps in processing some new information, and is reduced every time it makes the processing of some new information more difficult.

Such a definition is reminiscent of the kinds of criteria which have been known to have a bearing on evidentiality (see Ifantidou 2001 for a discussion within relevance theory). For instance, assumptions derived from direct perceptual experiences would be perceived as stronger than assumptions derived from reported experiences. Also, in the case of indirectly acquired information, strength will be a function of the hearer's assessment of the speaker's reputation and authority (see, for instance, the filtering mechanisms assumed to evaluate the source of an utterance in Wilson 2011; or in the account of Epistemic Vigilance as described in Sperber et al. 2010). Ifantidou (2001, 6–7), in her survey of the different types of evidentiality markers, distinguishes between (a) expressions which encode a property of the source of the information by describing how the information was sourced by observation, by hearsay, by inference, or by memory; and (b) expressions which describe the degree of speaker confidence in the information she conveys, i.e. her degree of certainty. Examples in (6) below illustrate the kinds of expressions which, according to this account, would induce a difference in evidentiality. Each example combines an evidentiality-modifying expression with a so-called 'ground-floor' assertion P (in this *case Lucy left the museum*) which falls within its scope.

(6) a. I saw when Lucy left the museum.

b. I was told that Lucy left the museum.

c. Consequently, Lucy must have left the museum.

d. I remember that Lucy left the museum.

e. I guess that Lucy left the museum.

In her detailed study, Ifantidou (2001) follows the suggestion made by Sperber and Wilson (1986/1995, 77, quoted above) and links the strength of an

assumption with the degree of evidentiality assigned to an utterance. However, her proposal exploits the connection between the two concepts without invoking directly the impact that strength – as one of the two factors which determine manifestness – would have on the internal structure of the cognitive environment and as a result on the comprehension heuristic. In this section, we would like to explore the insight which could be gained by linking evidentiality markers to a direct manipulation of the degree of manifestness of a proposition.

Indeed, Ifantidou's approach appears to capture strength on a different level. In her account, the effect of evidentiality markers will typically take place on two levels. On the one hand, evidential expressions are taken to trigger higher-level explicatures about the propositional attitude towards the proposition expressed. Thus, an utterance like (7) (from Ifantidou 2001, 82) is seen as triggering an explicature (8a), *John is qualified*, as well as a higher-level explicature (8b), *The speaker strongly believes that John is qualified*, which captures the strong commitment of the speaker.

(7) Clearly, John is qualified

(8) a. John is qualified

b. The speaker strongly believes that John is qualified

On the other, many evidentiality markers (like parentheticals, as in e.g. *Apparently, P* or *Obviously, P)* are assumed to increase or decrease the strength of the assumption representing the clause that is modified (*P* in this case); and crucially, under the proposed analysis, this is linked to a modification of the truth conditions of *P*. Thus, Ifantidou (2001, 147) writes that

Sometimes, a parenthetical comment alters the truth-conditional status of the ground-floor assertion[4] to which it is attached. It can do this in either of two ways: first, by marking the ground-floor assertion as a case of interpretive rather than descriptive use; and second, by affecting the strength of the assumption communicated (and hence the recommended degree of commitment to the proposition it expresses).

Both types of alteration concern the truth-conditional impact of evidentials. The first type is referring to hearsay expressions for instance (e.g. *I am told that*), through which the speaker conveys an interpretive attitude towards the embedded ground-floor utterance *P*. With such an expression, the speaker intends to distance herself from what is being stated in *P*: she does not commit to *P*. In the second type, an evidential expression (e.g. a strong adverbial like *clearly*) is intended to modulate the degree of commitment to *P*. Modulation, in this instance, can either strengthen or weaken commitment.

In both cases, it is argued that the evidential alters the truth conditions. In the second case, which is most relevant for our purpose, Ifantidou (2001, 153) explains that with *clearly*

[4] This corresponds to the embedded clause P

the speaker's commitment to *P* is strengthened, and it is indicated that there is clear evidence for *P*. We might call the commitment-strengthening evidentials 'strong evidentials'. The truth-conditional status of the utterance is altered because the range of falsifying evidence is altered.

While we certainly want to retain the insight regarding the theoretical adequacy offered by the notion of strength to provide a principled and systematic account of commitment phenomena, it seems that an even more direct relation between degree of commitment and strength – and therefore manifestness – could be put forward.

Commitment has been investigated from many different perspectives over the years (see Boulat and Maillat 2017 for an overview). It was quite central in French linguistics in the 1970s, with scholars like Culioli (1971) or Ducrot (1984) describing *la prise en charge énonciative* as a means for the speaker[5] to mark her endorsement of the truth of an utterance. More generally, it is usually understood to encapsulate the means offered by natural languages to endorse a given utterance at various degrees. Interestingly, the notion has been at the centre of more recent relevance-theoretic attempts to distinguish between the cognitive import of different types of meaning: for instance, by exploring the degree of commitment/endorsement attributed to explicit vs. implicit vs. presupposed meanings (see Morency et al. 2008; Moeschler 2013; Mazzarella et al. 2018; Bonalumi et al. 2020). The line adopted in this paper, though, will be closer to Ifantidou's (2001) endeavour to expound how commitment can be successfully captured by the concept of strength as it has been defined within relevance theory. As we just saw, commitment and evidentiality overlap in many ways. First, from a linguistic point of view, a majority of evidentiality markers would count as commitment markers (see for instance the list provided by Ifantidou 2001). Second, from a conceptual point of view, both commitment and evidentiality capture the degree of confidence attributed to the information conveyed by an utterance. From this it follows quite logically that strength, which was designed within relevance theory to explicitly capture the level of confidence with which a given assumption is entertained, seems to constitute the ideal theoretical construct to envisage commitment from a cognitive perspective.

However, there are, in Ifantidou's account, some aspects of the mechanisms governing commitment through strength which are left untouched. For instance, if commitment markers are to be treated as triggering higher-level explicatures (The speaker strongly believes that John is qualified in Example [7] above) distinct from the explicature they have scope over (John is qualified in Example [7]), then it is not entirely clear how the degree of commitment

[5] Even though this will constitute the main focus of this section, commitment is not solely linked to the speaker. The hearer will also have to attribute a certain degree of commitment to an utterance based on the evidence available to him. Then, he will have to assign a certain degree of commitment to an assumption when adding it to his cognitive environment. These questions, which lie outside the scope of this paper, are discussed in detail in Boulat and Maillat(2017)

associated with the explicature in question is going to remain associated with it beyond the comprehension process that gave rise to the higher-level explicature in the first place. Another way of looking at this issue would be to ask how, inside the cognitive environment of the hearer, two separate assumptions (the explicatures and the higher-level explicature) will remain associated for future purposes, since presumably you would want the degree of confidence assigned to a given assumption to remain a property of that assumption. Let us refer to this as the dissociation puzzle.[6]

A second question concerns the truth-conditional extension given to strength in the model. Strength has been theorised as a property of assumptions ultimately contributing to their relative manifestness in the cognitive environment. While this property could potentially have truth-conditional repercussions, it is not exactly clear how. For instance, when it is claimed that a weak evidential parenthetical like apparently increases "the range of falsifying evidence" (Ifantidou 2001, 153) by suspending commitment to the utterance it modifies, this would seem to imply that the degree of strength of a given assumption can impact its propositional content. This could be perceived as a significant extension of the original notion of strength. Would this mean that any modulation of the degree of strength has a truth-conditional impact? More generally, we would need to know how a modification of the truth conditions of an assumption could be regarded as a modification of its manifestness in the cognitive environment. Let us call this the truth-conditionality puzzle.

In order to address these issues, an alternative account of commitment can be elaborated on the basis of a notion of strength that contributes to the manifestness of assumptions. Following a proposal made by Boulat and Maillat (2017, 2023), the claim consists in seeing manifestness, through its strength component, as a cognitive marker of the degree of commitment associated with an assumption. In such an account, the manipulation of the strength of an assumption will have a bearing, by definition, on the degree of manifestness a given assumption has in the cognitive environment. More specifically, the impact of commitment markers on the comprehension heuristic is seen as an effect on the degree of manifestness assigned to the assumption that represents the enriched propositional form of the utterance. Thus, when an utterance is presented with a strong evidential, like clearly, to mark the speaker's confidence in the information conveyed, the corresponding assumption will be acquired and stored in the cognitive environment with relatively greater strength than if the same information is conveyed with a weak evidential like apparently. As a result, in the presence of conflicting assumptions such as in Example (9) below, both utterances a and b are part of the cognitive environment of Lucy, but the assumption associated with Logan's utterance will be stronger – and therefore

[6] Again, we would not want to lose the crucial insight offered in Ifantidou's (2001) model, whereby higher-level explicatures are seen as responsible for explicating speaker commitment. Instead, we want to argue that the 'ground-floor' explicature itself retains a trace of that process. How the two phases of this process are articulated is a topic for future research

more manifest – than the assumption associated with Max's. Consequently, the former will be more likely to be selected as a supporting contextual assumption by the comprehension heuristic in a scenario where Lucy has to derive the meaning of *Anton is positively beaming these days!* uttered by another of her friends. While both statements could serve as supporting evidence in the calculation of the intended meaning, Max's statement (9a) will be interpreted as involving a lower degree of commitment, which will weaken the strength of the ground-floor proposition (*Anton is in a new relationship*), and, consequently, its manifestness in Lucy's cognitive environment.

(9) a. Max – Someone told me they think Anton is in a new relationship.

b. Logan – Clearly, Anton loves his work environment.

In this fashion, Ifantidou's (2001) insight about the theoretical aptness of strength to capture commitment phenomena is crucially preserved, together with the original definition proposed for the concept of strength as one of two factors which determine the manifestness of assumptions in the cognitive environment. As a consequence, the model would not be facing the truth-conditionality puzzle, since the truth conditions of the assumption are not modified by the commitment markers and strength is considered to translate into a cognitive property of assumptions, i.e. manifestness. Moreover, this alternative account straightforwardly handles the effects commitment markers are expected to have on the comprehension heuristic by simply relying on the path-of-least-effort requirement built into the heuristic. As we saw with the previous example, the increased/decreased manifestness induced by the use of commitment markers will lead to the desired output for the comprehension heuristic.

Another gain offered by this approach is that it keeps the degree of confidence assessment inherently tied to the 'ground-floor' assumption. This means that the level of strength linked to either assumption in Example (9) is built into the assumption itself and does not depend on a second assumption that corresponds to a higher-level explicature on the propositional attitude expressed by the speaker to be retrieved. In other words, degrees of commitment are directly built into the assumption itself and does not depend on a second assumption that corresponds to a higher-level explicature on the propositional attitude expressed by the speaker to be retrieved. In other words, degrees of commitment are directly built into the assumption modified by the evidential and not mediated through a separate assumption. This fact would, in turn, solve the disjunction puzzle.

Empirical evidence

Interestingly, it appears that this alternative account receives independent support from empirical evidence. In research reported in Boulat (2018), an attempt was made to determine if predictions which arise from this model could be tested by means of an experimental design. One of the key contributions in

this study touches on the proposal put forward regarding means to measure strength. The main claim is to assume that strength, as a determining factor of manifestness, will leave a cognitive trace on the representation of the information which has been modulated by the commitment marker (Boulat and Maillat 2017, 2023). The specific measure implemented in the study is directly related to the following observation:

> Understood in this way, the strength of an assumption is a property comparable to its accessibility. A more accessible assumption is one that is easier to recall.
>
> (Sperber and Wilson 1986/1995, 77)

Equipped with this claim, the alternative model advocated here would predict that the stronger an assumption, the better the accuracy score in a recall task, and, therefore, that the higher the commitment of the speaker to the information conveyed by an utterance, the higher the accuracy score in retrieving the assumption representing that utterance. This hypothesis was tested with 133 participants in a within-subject recall task using stimuli representing three levels of commitment markers taking scope over a ground-floor proposition P:

- Non-commitment (e.g. I don't know if, I'm not sure, I hope)
- Weak commitment (e.g. I guess, I think, It seems)
- High commitment (e.g. I am sure, I know, No doubt)

The results obtained in this experiment support the proposal made above, as accuracy scores positively correlate with the degree of commitment marked in the utterance. In other words, the manipulation of evidentiality/commitment markers has an impact on the manifestness of a given assumption in the cognitive environment of the hearer. Specifically, a significant effect of high-commitment markers is found in a mixed-effect analysis against the non-commitment baseline (see Boulat and Maillat 2023 for discussion).

These results are taken to provide independent evidence for the kind of model advocated in the present paper and to call for further investigations of the relationship between the epistemic value assigned to the utterance and the first factor determining the manifestness of the corresponding assumption, namely its strength. In the next section, we take a closer look at the second factor to establish manifestness, i.e. accessibility.

6. Accessibility and emotions

Manifestness, as an organizing principle of the cognitive environment, can also provide a theoretical basis for other interesting insights into another communicative phenomenon, if we turn to its second component. As we saw in Section 4, accessibility (sometimes referred to as salience in more recent accounts, e.g., Sperber and Wilson 2015) constitutes the second determining

factor to influence the manifestness of an assumption. But whereas strength is based on epistemic grounds, accessibility is a purely cognitive notion which is a function of the processing history of the assumption. Thus, Sperber and Wilson (1986/1995, 77) describe accessibility as a form of relative cognitive activation of a representation in one's cognitive environment:

[Accessibility works] as a result of some kind of habituation, the more a representation is processed, the more accessible it becomes. Hence, the greater the amount of processing involved in the formation of an assumption, and the more often it is accessed thereafter, the greater its accessibility.

This second factor is obviously constitutive of manifestness as defined earlier, and, consequently, will have an impact on the processes of the comprehension heuristic. Hence, accessibility can be regarded as a guiding principle, or more accurately, as contributing to an ordering relation (as defined in Sperber and Wilson 1986/1995, 142) in the cognitive environment, which ensures that the comprehension heuristic converges on the most salient candidate in the current talk exchange.

In this section, our goal is not, however, to investigate the role played by accessibility in standard communicative exchanges, but rather to explore the kind of insights which can be gained from this theoretical construct outside the well-trodden ways of interpretative processes. Specifically, the idea is to explore how accessibility could constitute a theoretical concept of choice to capture important effects triggered by non-propositional aspects of communication, and in particular some of the effects induced by emotional states.

In recent years, relevance theory has become increasingly interested in trying to account for the communicative import of emotions. Following up on the initial suggestions made by Sperber and Wilson (1986/1995), scholars have elaborated a more refined pragmatic model (Wharton 2009; Dezecache et al. 2013, 2015; Wharton and Strey 2019; Wilson and Carston 2019; Saussure and Wharton 2020; Wharton et al. 2021 amongst others) to describe the effects induced by affective states. For example, when she utters (10) (from Sperber and Wilson 1986/1995, 219), the speaker communicates about her affective state, which in turn has an influence on the pragmatic interpretation of the meaning communicated by (10). Beyond the information regarding her age, the speaker also conveys a range of contextual implications licensed by the nostalgic affective state signaled by the repetition of the word gone:

(10) My childhood days are gone, gone!

In their original endeavor, Sperber and Wilson (1986/1995) had already envisaged this type of effect, for instance, when they defined the notion of impression (as it arises when opening a window and sniffing the sea-side air for instance) within the relevance-theoretic framework, and crucially for our purpose, they had immediately linked it to the concept of manifestness.

What we are suggesting is that an impression might be better described as a noticeable change in one's cognitive environment, a change resulting from relatively small alterations in the manifestness of many assumptions, rather than from the fact that a single assumption or a few new assumptions have all of a sudden become very manifest. (Sperber and Wilson 1986/1995, 59) The same idea is applied by Wilson and Carston (2019) to tackle affective effects specifically; they are seen as making more manifest an "array of propositions [i.e. assumptions]" or by Moeschler (2009). Based on the definitions posited in Section 3, it should be clear that manifestness in this case should be understood as resulting from changes to the accessibility of assumptions rather than to their strength. By sniffing the air, the protagonist of the previous scenario does not change the degree of confidence she or the hearer has towards these assumptions–nor the way they are acquired. Instead, an impression or an emotion will increase the contextual salience and facilitate the processing ease for these assumptions.

In more recent relevance-theoretic approaches to emotions, Wharton and colleagues have elaborated this model further. Two claims, in particular, appear to resonate with the present discussion on the manifestness of assumptions. The first insight concerns the similarity observed between affective states and procedural expressions. Wharton and Strey (2019) draw a parallel between the kind of procedural instructions conveyed by discourse connectives (see Blakemore 2002 for discussion), and the way an emotion can contribute to the interpretation of an utterance. In Example (11) below, the interlocutor expresses her disgust while (verbally) answering the initial question. According to Wharton and Strey (2019, 258) and Wharton (2009), by making her affective state manifest, the interlocutor would facilitate the retrieval of compatible contextual assumptions for the hearer:

(11) Would you care for some oysters? – For dessert?! Yugh! (DISGUST)

The second insight concerns the way the theory should account on a cognitive level for the sort of effects triggered by affective expressions found in Example (11). Indeed, the procedural approach advocated in the previous paragraph does not seem to exhaust the communicative import of an affective expression. The interlocutor's response in (11) does not only facilitate the interpretation of the exclamative For dessert?! as conveying a negative answer to the question; on the contrary, as Saussure and Wharton (2020) argue, the expression of disgust ought to be regarded as contributing an additional effect of its own.

However, such an effect could not be adequately captured by the traditional relevance-theoretic notion of positive cognitive effect, defined as "a cognitive effect that contributes positively to the fulfilment of cognitive functions or goals" (Sperber and Wilson 1986/1995, 265). Indeed, an issue

arises here because cognitive effects are to be understood as modifications of the cognitive environment, which, as we saw in Section 2, consist of a set of assumptions – i.e. propositions – manifest to an individual. Specifically, positive cognitive effects are understood as leading to either (i) the strengthening of an existing assumption, (ii) the weakening of an existing assumption, or (iii) the licensing of a new, distinct assumption in the cognitive environment. Wharton and Strey (2019) and Saussure and Wharton (2020) highlight the difficulty of treating affective states as having such traditional positive cognitive – and hence, propositional – effects. Instead, they propose a notion of positive affective/emotional effect which would not be propositional but could have a bearing on cognitive effects. Thus, through the use of the expression of disgust Yugh!, the protagonists of Example (11) can be seen as having been "directed to a course of reasoning, and to the derivation of the positive cognitive effects they are inferring, subconsciously, by their emotional state."

The mental events that have prompted these particular courses of reasoning are not 'cognitive effects' in the sense of Sperber and Wilson's [1986/1995] – they are non-propositional, and do not necessarily rely on ostension to be communicated – but they are effects nonetheless [...]. (Wharton and Strey 2019, 263, emphasis in the original) Let us refer to this issue as the cognitive-effect puzzle.

Another question raised concerns the way the affective state enters the communicative exchange. In Example (11), the affective state is experienced by the speaker and conveyed through the use of the emotional expression Yugh!. In other circumstances, however, such as in Example (12), the affective state is induced by the speaker through her utterance but experienced only by the hearer:

(12) (Uttered as H is standing next to an old, rickety, wooden bridge over a river, and assuming that S does not care about H's well-being but does not want him to cross the bridge.) – This is a VERY old bridge. (seeking to induce FEAR)

It appears that the notion of positive affective effects defined as "powerful boosters for the search for relevance [which] dramatically facilitate the identification of what is worth being attentive to" by Saussure and Wharton (2020, 199) does not apply in the same way to (11) and (12). Whereas the affective state of disgust would boost the comprehension heuristic and facilitate the interpretation of the speaker's response in (11) by making her emotional state explicit, in (12) the affective state of fear is not experienced by the speaker but induced in the hearer by the utterance. Consequently, the effect of the emotional state could not be regarded in similar fashion as one of facilitation for the comprehension heuristic. In this second scenario the affective state induced by the utterance does not have a procedural input for the retrieval of the

speaker's intended meaning. The induced affective state is meant to trigger the hearer's self-preservation instinct and bear on the kind of contextual assumptions which are immediately accessible to him. In that sense, the emotional state does not have the procedural effect described above. Let us refer to this as the expressed-vs.-induced-emotion puzzle.

An interesting extension of the current model for affective states could be put forward based on the second component that determines the manifestness of assumptions, i.e. accessibility. While the proposal does not claim to offer a comprehensive model for the treatment of emotions in a relevance-theoretic framework, it is argued that it offers interesting solutions to the two puzzles highlighted in the previous paragraphs. It consists in assuming that one type of positive emotional effect could be advantageously conceived of as a large-scale re-ordering of the accessibility of assumptions in the cognitive environment.

In this approach, affective states have an impact on cognitive processes by affecting the degree of manifestness of assumptions. In a case like (11), such an impact could be regarded as having a boosting effect for the comprehension heuristic in the search for relevance of the utterance For dessert?!, as assumptions triggered by the speaker's emotion of disgust will be made more manifest. Thus, the reordering of accessibility in the cognitive environment would act as the kind of "attractor of attention" mentioned in Saussure and Wharton (2020, 199). In this first case, the accessibility – and, therefore, manifestness – of assumptions is modified in the speaker's cognitive environment and the hearer's representation thereof. This would effectively provide a cognitively grounded explanation for the process identified by Wharton and Strey (2019, 266) through which "emotional states motivate acts of inference, [...] influence them."

But the reshuffling of accessibility induced by an emotional state could also be used actively and directly to reshuffle the accessibility/manifestness of assumptions in the hearer's cognitive environment (independently of the emotional state of the speaker). This is what would happen when the speaker in (12) induces fear in her addressee in order to change the manifestness of assumptions in his cognitive environment. As should be clear from these two contrasting configurations, the alternative model advocated in this paper could account for both expressed and induced emotions. In the latter case, an utterance or another ostensive behaviour is used to induce a cognitive change in the cognitive environment of the hearer.

This extension of the model also appears to provide an elegant answer to the first puzzle regarding the nature of the effects elicited by emotions. Interestingly, by claiming that affective states have an impact on the accessibility of assumptions, a new take is offered on what constitutes a positive affective effect. In essence, in this approach, a positive affective effect is cognitive in that it affects the internal structure of the cognitive environment by

modifying the manifestness of assumptions therein. However, it is not considered propositional as it does not bring about any change in the set of assumptions or their relative strength. As was pointed out earlier in a quote from Sperber and Wilson (2015, 133; see full quotation in Section 4), accessibility is a cognitive notion, but strength is an epistemic one. In that sense, this second proposal must be articulated around the accessibility factor, and not around strength. It also offers an interesting solution to the cognitive-effect puzzle.

The present approach is reminiscent of the treatment of impressions by Sperber and Wilson (2015, 137), who explain the kind of cognitive effect that an impression would have on a man who opens a window as he intends to go for a walk:

When Robert opened the window, an array of propositions became manifest or more manifest to him [...]: they became more likely to be attended to, and more likely to be taken as true, than they had been before, and were therefore more likely to influence his decision. He may have been aware of this increase in the manifestness of an array of propositions, and of their general drift, without entertaining all of them, and maybe even without entertaining any of them as a distinct proposition.

Arguably, the kind of positive affective effects described in our examples would be based exclusively on the 'general drift' of a reshuffled order of accessibility in the cognitive environment and as a result influence other cognitive processes, including – but not limited to – the comprehension heuristic.

In that view, from a cognitive perspective, emotions would be associated with entrenched accessibility configurations or patterns which have become engrained in the cognitive system through habituation. Whereas impressions offer online, nonce reshuffling of the manifestness of assumptions, emotions correspond to fixed, entrenched accessibility patterns. Going back to the formulation used in the previous quotation, these emotional patterns of accessibility could be described in terms of their general drift. Thus, the positive affective effect associated with disgust would make more accessible – and therefore, more manifest – an array of assumptions pertinent to bodily revulsion, whereas the affective state induced by fear would render more accessible assumptions which are pertinent to self-preservation.[7]

7. Conclusion

Deirdre Wilson's work pioneered research in relevance theory by applying the Gricean framework to cognitive science and introducing essential modifications to the original pragmatic model. This paper explored how the need to organize contextual information that feeds into the inferential derivation

[7] There might be more suitable labels for the proposed 'general drifts.' The cognitive construct, more than the actual label, is what is at stake here.

of pragmatic meaning and to manage the amount of information entering interpretative processes led to the development of a concept of manifestness based on two central properties of contextual assumptions. By applying the existing model to two other phenomena in communication—namely, commitment and emotions—this research focused on the type of theoretical insights that can be gained by assuming that assumptions in the cognitive environment are characterized by their manifestness, captured in terms of two general parameters: a cognitive factor of accessibility in the cognitive environment, and an epistemic factor of strength. The combination of both factors is assumed to determine the manifestness of an assumption relative to others, thereby introducing an internal ordering relation in the cognitive environment.

The two arguments put forward sought to exploit the kind of theoretical insights which can be gained from these notions to extend the relevance-theoretic approach to commitment phenomena and certain kinds of emotional effects in communication. Building on Ifantidou's (2001) work, the paper proposed to address some of the remaining questions about commitment by assuming that the degree of confidence assigned to an utterance—such as through the use of evidentiality markers—affects the manifestness of the corresponding assumption via its strength. This approach offers new promising perspectives on the truth-conditionality and the disjunction puzzles and is supported by independent experimental evidence.

In the second line of investigation, this paper looked at recent efforts to integrate non-propositional content within the relevance-theoretic model. Specifically, it proposed to capture the boosting effect of emotional states by using the accessibility parameter to provide an account of the kind of attentional shifts that emotions can give rise to. In doing so, the approach offers a complementary take on some of the issues discussed by Wharton and colleagues. Such insights also open the door for new investigations, raising questions of their own. One important question is how strength is assigned if commitment is to be accounted for in terms of strength. A promising avenue for future extensions of the model would be to exploit Ifantidou's insight about higher-level explicatures and connect the derivation of higher-level explicatures about the speaker's propositional attitude to the assignment of strength to an assumption. Additionally, if the proposal to capture positive emotional effects as cases of reshuffling the accessibility ordering in the cognitive environment is taken seriously, this would open the door for an analysis of emotions as generating genuine cognitive effects of their own.

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