


Abductive Reasoning and Language Philosophy: Peirce's and Davidson's Account of Interpretation



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Abstract:

The Peircean idea of interpretation as an inferential process of hypothesis adoption reveals a surprising anticipation of the account of interpretation deployed by Davidson in his article "A nice Derangement of Epitaphs". For Davidson, the process of interpretation is a transformation of "prior theories" into "passing theories". In the following I want to point out the similarities between the Davidsonian and the Peircean model of interpretation by highlighting the crucial role that the interpreter's "abductive competence" plays in the process of communication.

Keywords: Abduction, Language Philosophy, Davidson, Interpretation, Plausibility, Rule, Economy

1. Problems of contemporary language philosophy

The main question for any philosophy of language is: What do we have to know and what do we have to do in order to understand someone else's utterance in the right way? According to Austin's and Searle's theory of Speech Acts the necessary condition of all understanding is a mutually shared and conventionally coded knowledge about the right use of language.

In his article "What is a Speech Act?" Searle's states that, "one's meaning something when one says something is more than just contingently related to what the sentence means in the language one is speaking" (Searle, 1991, p.259). This non-contingent relation between the conventional and the intentional aspect is, according to Searle, realized in the different conventionally coded "illocutionary functions" of a speech act. Searle claims that these illocutionary functions have the status of "constitutive rules" (1991, p.256), e.i., rules that "constitute (...) an activity the existence of which is logically dependent on the rules" (1991, p.256). Searlean Speech Act theory is based on an account of meaning defined by the shared mutual knowledge of the fulfillment conditions of the illocutionary function of each type of speech act: "what we can mean is a function of what we are saying. Meaning is more than a matter of intention, it is also a matter of convention" (1991, p.259).

In this model the interpreter has to presuppose necessarily that every utterance is the token of an illocutionary type of function. In order to understand others and in order to be understood by others, knowing and accepting the conventional coded fulfilling conditions of the different speech acts is constitutive and necessary. Hence, Speech Act

Theory relies on an *apriori* typology of possible communicative contexts and possible "utterance-meanings". This leads into a model of conventionally defined communication, which can also be found in Jakobson's Semiotic concept of understanding as decoding process, deployed in "Two Aspects of Language" (1954). According to Jakobson an effective communication presupposes that speaker and interpreter have more or less the same cognitive "card index box" of prefixed meaning.

Davidson, on the contrary, - and this is the most interesting point in his model of understanding - argues that some commonly accepted views about what is to "know a language" have to be modified. In particular we "must give up the idea of a clearly defined shared structure which language users acquire and then apply to cases" (Davidson, 1986, p.446). Instead we should try to say "how convention in any important sense is involved in language" (Davidson, 1986, p.446), in order to get "a deeper notion of what words, when spoken in context, mean" (Davidson, 1986, p.434).

Davidson calls into question, whether our understanding requires necessarily a notion of "first meaning", which has (1) systematic relations between meanings of utterances, where (2) first meanings are shared, and where these first meanings (3) are governed by learned conventions or regularities (Davidson, 1986, p.438). He denies that we must have shared "linguistic knowledge" defined as mutually shared knowledge about the "illocutionary functions" of utterances. What must be shared, however, is "the interpreter's and the speaker's understanding of the speaker's words" (Davidson, 1986, p.438).

Thus, the necessary "knowledge or abilities a hearer must have if he is to interpret a speaker" (Davidson, 1986, p.436) are, according to Davidson, abilities prior to linguistic competence, namely abilities for creating plausible theories about the speaker's intention. This turns into Davidson's apparently provocative statement:

"what interpreter and speaker share, to the extent that communication succeeds, is not learned and so is not a language governed by rules or conventions known to speaker and interpreter in advance (...)" (Davidson, 1986, p.445).

As proof for this thesis Davidson points to the ability to understand intentional or non-intentional deviations from the "ordinary use" of language. Examples for these surprising, funny utterances that become a challenge for our efforts to understand, are jokes, metaphors or "malapropism". The crucial point, however, is that there are no conventions or rules for creating or understanding metaphors, irony, humor, etc. No code is applicable - one must guess what could be meant - that is - one must adopt some

hypotheses about a possible meaning. As a consequence: If we fail to do so, there won't be understanding.

Misunderstanding, then, is due to the interpreter's lack of competence to find a plausible hypothesis, as the following dialogue between Don Quichote and Sancho Pansa might demonstrate. Sancho says to his master:

"Senor, I have educated my wife to let me go with your worship wherever you choose to take me".

"Induced, you would say, Sancho", said Don Quichote, "not educated".

How is it that Don Quichote can figure out that Sancho Pansa means "induced", although he said "educated"? Apparently Don Quichote adopted the hypothesis that the word "induced" would be more appropriate for the given context of the utterance. In the case of a malapropism, as Davidson puts it,

"the hearer realizes that the 'standard' interpretation cannot be the intended interpretation (...)."

The absurdity or inappropriateness of what the speaker would have meant had his words been taken in the 'standard' way alerts the hearer to trickery or error" (Davidson, 1986, p.434).

Generally speaking: The interpreter transforms in the course of interpretation a "prior theory" into a "passing theory": What is shared at the end of interpretation is the passing theory, and "what is given in advance is the prior theory" (Davidson, 1986, p.445). The process of interpretation is a process of transforming theories. Every deviation from "ordinary usage", "is in the passing theory as a feature of what the words mean on that occasion" (Davidson, 1986, p.442f). The interpreter has to alter his theory,

"entering hypotheses about new names, altering the interpretations of familiar predicates, and revising past interpretations of particular utterances in the light of new evidence" (Davidson, 1986, p.441).

Thus, the process of interpretation is not a mere application of codes and convention but an inferential process of adopting hypotheses about the speaker's intention and about a plausible "utterance meaning". "The asymptote of agreement and understanding is reached when passing theories coincide" (Davidson, 1986, p.442).

Since a passing theory is an *aposteriori* phenomenon, it cannot in general correspond to an interpreter's linguistic competence as an *apriori* phenomenon. Thus, I would like to argue that the crucial point in the process of understanding is the mutually shared competence to create plausible theories - namely an "abductive competence". This could help to elucidate in what sense Davidson is right to claim that the process of

understanding needs not necessarily shared codes and conventions - but "rules of thumb" that guide the process of "creating new theories" (Davidson, 1986, p.446).

2. Interpretation as abductive transformation

Right at this point we should ask how the question "What is a rule?" interacts with the question "what is abductive inference?" and in what sense is this kind of inference "creative"? According to Peirce, the process of interpretation is structured as argumentation. The "mind is a sign developing according to the laws of inference" (CP 5.313). The process of thinking and reasoning is based on inferences, aiming at establishing regularities, habits and beliefs.

A belief-habit in its development begins by being vague. Only during the process of interpretation "it becomes more precise, general, and full, without limit. The process of this development (...) is called thought". Hereby judgments are formed and transformed. The transformation of these judgements is caused by inference: "the antecedent judgement is called the premise; the consequent judgement, the conclusion" (CP 3.160). In this model Abduction is the "first stage" of interpretation (followed by deduction and induction), since it is searching for plausible premises by "forming explanatory hypotheses" (CP 5.171). The abductive anticipation of the "best explanation" ends up in the dynamical "fixation of belief".

In the "normal science paradigm" and in everyday understanding, abduction is performed as the process of inferential reconstruction of causes and intentions. It is, however, also the process of inventive construction of theories and revolutionary "paradigm switching" - namely the "only kind of reasoning which supplies new ideas" (CP 2.777). That means, abduction is precisely that kind of inference, or theory creation, on which Davidson focuses in his concept of interpretation.

The task of abduction is to determine the feature of a "non-standard" event - a surprising fact (CP 7.218) -, relevant to the formulation of a plausible hypothesis "that furnishes a possible Explanation" (CP 6.469). The logical form of abductive inference is this:

"The surprising fact, C, is observed;
But if A were true, C would be a matter of course,
Hence, there is reason to suspect that A is true" (CP 5.189).

The crucial point of abductive reasoning backwards "from consequent to antecedent" (CP 6.469) is that we take a surprising fact or a funny utterance as the effect of an

unknown cause, and as conclusion of yet unknown premisses that have to be taken into account, in order to understand what was actually meant. Hence, "Reasoning backwards" aims at discovering either a singular cause or a general rule, which has to be selected or invented. In this sense abduction is the process of "context-sensitive code-selection". This is precisely the way in which abduction is relevant for the process of understanding.

The supposition that the antecedent A could come to the conclusion C is nothing but a suspicion, due to the incoherence of an expectation or the inconsistency of a belief. Therefore, I would like to suggest that we should represent these background-presuppositions by introducing "B" to Peirce's formula. The "surprising fact" C is caused by disappointing the background-presupposition B.

When Sancho Pansa said "I educed my wife", Don Quichote modified the interpretation of the surprising utterance because he expected Sancho to mean "I induced my wife". This was nothing but a hypothesis, triggered by the background presupposition that Sancho Pansa made a quite obvious mistake of ignorance. At the same time, the process of transforming Don Quichote's "prior theory" about Sancho Pansa's utterance into a "passing theory", modifying "educed" into "induced" can be represented as abductive inference.

The surprising utterance C ("I educed my wife") has to be interpreted. It appears to be surprising because its use in the given context contradicted Don Quichote's expectation (i.e. his "prior theory") about what Sancho could have meant, if he wanted to say something that makes sense. Due to the incoherence and irrelevance of Sancho's utterance in the given context, Don Quichote adopted the hypothesis A that Sancho omitted a malapropism, mixing up the term "educed" with another term that would be more coherent and more relevant.

Thus, we can assume with Davidson, but also with Sperber and Wilson that the formal "leading principles" of our background presuppositions are the principle of coherence and the principle of relevance. Together they build a general theory T that organizes the relation between the background presupposition B, the surprising fact C and the hypothesis A. Only when we expect it to be relevant and coherent, does the utterance C appear to be surprising. The hypothesis A, on the contrary, connects with the principles of coherence and relevance better. Nevertheless, we don't yet know how we get from the problematic conclusion C to the elucidating antecedent A. Peirce argues that in an abductive argument the relation between the facts stated in the premisses and the facts stated in the conclusion is iconic (CP 2.96).

"An originary Argument, or Abduction, is an argument which presents facts in its Premiss which present a similarity to the fact stated in the Conclusion, but which could perfectly well be true without the latter being so, much more without its being recognized; so that we are not led to assert the Conclusion positively but are only inclined toward admitting it as representing a fact of which the facts of the Premiss constitute an Icon" (CP 2.96).

Peirce gives the example of Kepler's discovery that the observed longitudes of Mars, which he had long tried in vain to get fitted with an orbit, "were (within the possible limits of error of the observations) such as they would be if Mars moved in an ellipse. The facts were thus, in so far, a likeness of those of motion in an elliptic orbit" (CP 2.96).

But what does this mean in respect to the "formula of abductive inference? From a phenomenological point of view the surprising fact C is the beginning of investigation, since the incoherence between C and the background presuppositions B are in need of a plausible theory, explaining the incoherence within the framework of T. From a logical point of view, e.i., if we try to describe this process as a syllogism, C is the result of an unknown antecedent process, partaking the role of the conclusion. The background presuppositions B are playing the role of one of the premisses, while the Hypothesis A is the other. Now, since it is the incoherence between C and B that makes C a surprising fact the trace of the background presupposition B can be found in the premisses as well as in the conclusion.

Thus, the iconicity between facts stated in the premisses and facts stated in the conclusion is due to a similarity of relation. The "surprising fact" is the incoherent relation between C and B. Since the "abductive theory" A gives a plausible explanation by integrating this incoherent relation in a new theory, it has to display this incoherent relation in the process of "reasoning backwards". In other words: The process of problem solving produces an icon of the problem that has to be solved. The same is true for the process of transforming the "prior theory" (T (B,C)) into the passing theory (T (A (B,C))). Hence, there is an iconic relation between the explanandum, namely the incoherence of B and C and the explanans A explaining the incoherence of B and C. The iconicity between antecedent premisses and conclusion, thus, consists in the fact that the problematic and surprising relation between B and C can be integrated without deletion of either of the premisses, if A is also part of this argumentation.

However, iconicity takes place also in another respect. Let's go back to Don Quichote: The irrelevant term "educed" and the more relevant term "induced" sound similar, although they have different meaning. Now, why did Don Quichote (or the author of Don Quichote, or its translator) prefer to guess that "induced" was meant but not the

synonymous term "persuaded" or "convince"? Apparently the "principle of selection" that applied here aimed at maximal similarity and minimal change. The outcome of this constellation, combining iconicity, contextual relevance, and coherence is an abductive guess, i.e., a conjecture, throwing together a similar word with an different meaning that fits better into the given intentional and conversational context.

3. Abduction and Plausibility

Since abductive inference is not a valid kind of formal deductive logic, it can only claim the status of a "logica utens", integrating associations and presuppositions into an argumentation. Nevertheless, abductive inference can claim "pragmatic validity", if it is "reasoning to the best explanation", based on pragmatic coherence, that is "plausibility". Here, of course, the question emerges: what are the standards of plausibility and of "pragmatic rationality"? In his article "Incoherence and Irrationality" Davidson sketches out an answer to these questions by telling the story of an inferential malapropism. The story is this:

"It was a warm day, doors stood open. I lived in one of a row to attached houses in which faculty members were housed. I walked in the door. I was not surprised to find my neighbor's wife in the house: she and my wife often visited. But I was slightly startled when, as I settled into a chair, she offered me a drink. While she was in the kitchen making the drink I noticed that the furniture had been rearranged, something my wife did from time to time. And then I realized the furniture had not only been rearranged, but much of it was new - or new to me. Real insight began when it slowly came to me that the room I was in, was a mirror-image of that room I was familiar with; stairs and fireplace had switched sides. I had walked into the house next to mine".

According to Davidson his misinterpretation was a mistake in the process of hypothesis adoption, since he managed to accommodate the growing evidence against his assumption that he was in his own house "by fabricating more and more absurd or far-fetched explanations" (Davidson, 1985, p.347). If Davidson, as he concludes, had adhered to his "own standards of hypothesis formation, of 'inference to the best explanation' as Harman calls it" (Davidson, 1985, p.348), he would have wondered much sooner than he did whether his assumption was correct.

The most important aspect of the parallelism between Peircean and Davidsean description of the process of "hypothesis adoption" is the Principle of Economy. Davidson states that he spent too much effort in forcing the data to fit an implausible theory (Davidson, 1985, p.348). While plausibility is related to relevance and coherence, implausibility contradicts the principle that evidence should be "most easily or

economically brought back into line" (Davidson, 1985, p.349). Davidson's "principle of interpretive economy" corresponds to the Peircean "Economy of Research" underlying the abductive process of hypothesis selection and formation: "the leading consideration in Abduction", Peirce says, "is the question of Economy - Economy of money, time, thought, and energy" (CP 5.600).

The "principle of economy" applies to the simplicity of the hypothesis in itself as well as to the procedure of hypothesis testing: "... if two hypotheses present themselves, one of which can be satisfactorily tested in two or three days, while the testing of the other might occupy a month, the former should be tried first" (CP 5.598). The "principle of economy" is crucial, because it provides the possibility of an "abductive shortcut" in the infinite process of interpretation. At the same time the economy of hypothesis selection is the pragmatic standard, the "rule of thumb" of a rational interpretive attitude, underlying even the principles of coherence and relevance.

4. Conclusion

In conclusion I would like to resume four points:

- Firstly, Davidson describes the process of understanding and interpreting as an economical transformation of "prior theories" into "passing theories".
- Secondly, the transformation takes place not by application of conventional codes but under the influence of inferences that have the form of "reasoning to the best explanation".
- Thirdly, "reasoning to the best explanation" is the same kind of inference that Peirce described as abduction.
- Fourthly, the leading consideration of abduction and of the transformation of prior theories into passing theories is the principle of economy.

The "rule of thumb" Davidson refers to in "A nice Derangement of Epitaphs" are the rules of efficient abduction, deriving plausible explanations, and "creating new theories to cope with new data in any field" (Davidson, 1986, p.446). Instead of an apriori mutually shared knowledge of codes and conventions the competence to select or formulate plausible hypotheses in the course of communication has to be shared by speaker and interpreter. Hereby the "abductive competence" interacts with the "economy of discourse" and the "principle of charity".

With respect to the Peircean notion of abduction, Davidsons's provocative thesis that "there is no such thing as a language" (Davidson, 1986, p.446) if language is understood as "governed by rules or conventions known to speaker and interpreter in advance (...).

" (Davidson, 1986, p.445) becomes less provocative. At the same time his denial of an a priori linguistic competence as a necessary condition for communicative understanding suggests the necessity to presuppose an a priori abductive competence, underlying all processes of understanding. Abductive inference is the process of transforming "prior theories" into "passing theories".

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