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Abduction, Hermeneutics, and the Interpretation of Interpretations

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Abstract This paper is concerned with two interrelated ideas: the first one is that the American philosopher Charles Sanders Peirce was actively engaged with questions of hermeneutics proper and modified his theory of inquiry so as to be able to accommodate objects of investigation that are generally treated within a hermeneutical framework. Nowhere else does it become as clear as in his 1901 text "On the Logic of Drawing History from Ancient Documents, especially Testimonies" that what he calls abduction is not only a logical mode of inference but a comprehensive procedure for the invention and the selection of hypotheses in relation to conditions of subjectivity explained in terms of a pragmatic naturalism. The second idea is that the advances Peirce made in the field of philologico-historical inquiry can be made relevant with regard to the interpretation of data in every field of scientific activity. Being more than a strictly methodological proposal, Peirce's 'hermeneutics' leads us to realize that at its core, all scientific inquiry hinges upon basic rhetorical and ethical fundamentals that guide cooperation within and across disciplinary boundaries.

Keywords Interpretation · Inference · Methodology · Interdisciplinarity · Peirce · Way of inquiry

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Introduction

The reception of Charles Sanders Peirce in European hermeneutics could well be dubbed 'Peirce Unlimited,' as it is characterized by a rendition of his theory of signs that strongly overemphasizes the aspect of regressive procedurality. One of the first to take him up on this was Jacques Derrida who famously wrote in his *Grammatologie* that "Peirce goes very far in the direction that I have called the deconstruction of the transcendental signified, which, at one time or another, would place a reassuring end to the reference from sign to sign" (Derrida 1974, p. 49). Of course, it is commonly accepted today that Peirce only went so far in this direction and that the Dynamical Object as well as the Ultimate Logical Interpretant (also known as habit, e.g., Alston 1956) indeed impose somewhat reassuring limits on the free play of signification from outside of semiosis. This is a consequence of Peirce's pragmatistic foundation of semiotics (see CP 5.14–18)[1] and involves the idea that "a sign is only a sign in actu by virtue of its receiving an interpretation, that is, by virtue of its determining another sign of the same object" (CP 5.569). According to Peirce, to interpret is to determine another sign of the same interpreted object. The very principle of pragmatism presupposes the possibility of infinite interpretation. However, the rationale of Peirce's maxim of pragmatism consists in the identification of use and meaning. Signs tend towards the truth which implies the possibility of pragmatically satisfactory sign manipulation. Such an interpretation occurs in and contributes to a "universe of discourse" (CP 2.517), namely that of its interpreter(s). Interpretation is only possible, because it is possible to interpret infinitely. Meaning is always anchored within an immediate universe of discourse, because the universe of discourse is a real possibility. However, the fact that meaning is merely a real possibility does not make something (a sign or set of signs) pragmatic, that is to say, purposeful. As part of the "physically possible, or […] the historically existent, or […] the world of some romance, or of some other limited universe" (CP 2.517), the sign begets its pragmatic role: it is used in a certain way and determines another sign. Peirce's theory states that "iterations of interpretations do reach those final, terminating nexus that reveal relevant information about the object and its reality. No infinite or endless semiosis is to be feared of" (Pietarinen 2015, p. 393).

In that way, Peirce's semiotics has several implications for the theory of knowledge, which spill into what could be called an experimental philosophy. Pape argues that Peirce classified the sciences teleologically "by the different final causes of the objects each science tries to represent" (Pape 1993, p. 581). This might seem controversially positivistic if it were not for the fact that semiosis is infinite and, simultaneously, regulated by and within a universe of discourse. Peirce thought that truth is always infinitely distant, but not in a way that would imply a relativistic epistemology. The infinitely distant truth is a defined final cause: the fact that it is infinitely distant makes not only interpretation and variations of interpretations possible, but truth itself is pursued through interpretations of interpretations. This idea of truth and its pursuit hinges on a teleological cosmology:

> At any time, however, an element of pure chance survives and will remain until the world becomes an absolutely perfect, rational, and symmetrical system, in which mind is at last crystallized in the infinitely distant future. (CP 6.33)

[1] References to Hartshorne et al. (1931) are abbreviated as "CP" followed by the volume and section numbers, references to Houser and Kloesel (1992) and Houser et al. (1998) are abbreviated as "EP" followed by the volume and page numbers.

This is the kind of truth that science hopes to pursue and that results in the construction of science as a "complex, purposive, and social activity or mode of life" (Pape 1993, p. 581). Peirce's semiotics is teleological, supposing continuous evolutionary dynamics of signs, while at the same time, its inherent anti-psychologism (see e.g., Stjernfelt 2014, p. 14, 47) precludes all forms of intentionality in an idealistic sense.

Notwithstanding the above, the idea that Peirce's semiotics was characterized by unchecked unlimitedness was reiterated by literary scholars like Wirth (2003) at least until the early 2000's and even careful attempts at intervention by those slightly better informed (e.g., Eco 1990, who, in an argument between him and Rorty, invoked the idea of "purpose," the dynamical object and the concept of habit all in only a few paragraphs, 38–40) did not stick.[2] The idea that interpretation was boundless was too familiar to generations of cultural studies scholars trained in hermeneutics and its supposed principle of endless circularity (or dissemination of signification). And of course, this idea also presented a convenient alternative to methodological rationalism, which sought to find the eternal rules providing interpretation with definitive closure.

This unfortunate rendition of Peirce stands in stark contrast to Charles Sanders Peirce himself, polymath and man of science, who, early in his life, in "The Fixation of Belief" (1877) outlined a history of methodology culminating in the supposed superiority of the scientific method (EP1: 115–123) conceived of as experimental science. This idea was pursued in a series of papers (the "Illustrations of the Logic of Science"), which brought to the light of day the pragmatic maxim and reached its conclusion in a presentation of Peirce's early conception of "Deduction, Induction, and Hypothesis" (1878).

When Peirce took up these ideas again in 1901, his views on methodology had undergone a change. "On the Logic of Drawing History from Ancient Documents, Especially Testimonies" (in the following LoDH), originally envisioned as a short book of about 150 pages, was never published and was only partially included in the *Collected Papers* (7.164–7.255), the *Essential Peirce* (EP2: 75–114) and in a book entitled *Historical Perspectives on Peirce's Logic of Science: A History of Science*, edited by Eisele (1985), and is only accessible in its entirety in the unedited manuscripts MS 690 and 691. In any case, it marks a sea change in the way Peirce conceived of induction and abduction and testifies to the fact that Peirce, without appropriation by any third party, was concerned with hermeneutical questions and actively sought to mediate between the 'sciences proper' and what would later be known as the humanities. In this way, LoDH can be regarded as a continuation of Peirce's doctrine of *synechism* (e.g., CP 6.169, "The Continuum"). According to this doctrine, secessionist separations of the sciences must be reconciled, because adherence to strict dichotomies tends to "block the way of inquiry" (EP2: 49, "The First Rule of Logic"). Among other things, synechism also has important consequences for educational curricula, as it suggests the similarity between the many divisions of science and the way they are taught (see Olteanu 2015, pp. 107–108). Curricula should be a mapping of the divisions of science, so to speak, which means that possible curricula are icons of science. Learning and scientific development are two semiosic phenomena

[2] Short (2007), pp. 45–46) actually mixes in Eco with the others, admits that he may have retracted his earlier view, and correctly states that he merely supplanted it with an 'interpretive community' view (which nevertheless *is* intuition-free). Whether Eco's view is *actually* rooted in a correct understanding of Dynamical Object and Ultimate Logical Interpretant is quite unclear.

'swimming' in the same continuum, as are the various fields of science as well. Thus, the easiest way to learn is to follow the abductive, deductive, and inductive arguments by which the various and continuous fields of science have come about historically. Consequently, there is no single definitive way of pursuing science.

Peirce's synechism accounts for pluralism in inquiry and scientific experimentation, as each loop of argumentation, particularly each abduction, will reveal new variations. This kind of continuity is understood in view of the fact that tokens of the same type are similar and not identical, which means that general types are tendencies and not strict, mechanical rules. Thus, synechism also demands and fosters critical doubt (see CP 5.509, "Consequences of Critical Common-Sensism"). Both a scientific experiment and learning start with abduction. To understand Archimedes's laws means to undergo an abduction similar to that of Archimedes himself. Peirce's argument for a strong connection between what is called education and scientific progress is based on simple, common sense assumption: the more a society trains its individuals in reasoning and scientific experimentation, the higher the chances that a society will progress scientifically. Following Peirce's argument, it is possible to accommodate an educational philosophy within the theory of knowledge.

When the LoDH treatise was written, Peirce was in the process of developing a *continuous* system of the sciences ("An Outline Classification of the Sciences", 1903) and his treatment of a sub-branch ("History") of what he called "Descriptive Psychics" (EP2: 261) can be considered an important first step in that direction. However, the fascination surrounding the realization that Peirce was actively engaged in devising a theory of interpretation which is continuous with general methods of science and, conversely, that his engagement with hermeneutical questions helped to sharpen his general theory of inquiry is somewhat undercut by the fact that the treatise has rarely ever been treated as such. The respective locations from the *Collected Papers* are frequently cited in discussions regarding the concept of abduction, but rarely are these portions of the text interpreted as if the manuscript was a discrete entity concerned with a unique problem. A hard to find article by Brunson (2009) takes the concept of abduction from LoDH and applies it to the concept of explanation. Pietarinen (2006) applies the hypothesis-related economic requirements to the study of historical pragmatics and Ben Novak recently made use of the six rules of hypothesis creation in his (somewhat odd) historical study *Hitler and Abductive Logic* (Novak 2014). Frederik Stjernfelt's *Diagrammatology* (2007), under the headline of "Literary Interpretation as Thought Experiment" (327–343), explores a lot of what is contained in the LoDH and draws very important conclusions regarding the status of functionally unrestrained reading, but only briefly touches upon the manuscript's relevance for the theory of hermeneutics in general. Finally, Maria Liatsi's seminal study *Interpretation der Antike* (Liatsi 2006) is the closest anyone has ever gotten to treating LoDH in its entirety. Unfortunately, the book was never widely discussed, at least not in the English-speaking world.

All in all, it seems the divide between Peirce and hermeneutics is once again as big as it was before the 1989 Peirce Sesquicentennial Congress in Harvard, which featured an entire panel dedicated to the topic "Semiotics and Hermeneutics" (published in Colapietro and Olshewsky 1996). The apparent lack of interest in Peirce on the part of hermeneutics is rather unfortunate, not least because LoDH, without the need for much adaptation, comments directly on the very relevant

hermeneutical problem of interpretive adequacy (*Angemessenheit*). This, we argue, can be said to constitute a fundamental concept for all scientific practices that involve interpretation.

Hermeneutics Without Sentimentality

The main concern of LoDH is with the adequacy of hypotheses in relation to the veracity of testimonies of historical events, i.e., with the procedures of verification of what is more or less hearsay evidence. Peirce found that on the forefront of contemporary historical criticism, a method was put to use that closely resembled Hume's method of balancing likelihoods. He was skeptical of the uncritical adoption of quantitative methods in historical studies, yet accepting of the fact that it is a very immediate approach to inquiry:

> Balancing reasons pro and con is the natural procedure of every man. No man can avoid doing so continually; and if he could, he would only have trained himself to the observance of rules having no foundation in reason. (EP2: 78)

His rejection, however, of the "German history scholars'" (cf. EP2: 81) way of interpretation was wholesale. He accused them of claiming to deliver what they inadequately label proofs of their findings by simulating a mathematical approach. This lends their interpretations an aura of necessary truth that is rooted in epistemological rationalism. Yet, their method is merely a variant of the a priori approach Peirce outlined in "The Fixation of Belief," where he characterizes findings made on the basis of that belief system to

> have been chiefly adopted because their fundamental propositions seemed 'agreeable to reason.' This is an apt expression; it does not mean that which agrees with experience, but that which we find ourselves inclined to believe. Plato, for example, finds it agreeable to reason that the distances of the celestial spheres from one another should be proportional to the different lengths of strings which produce harmonious chords. (EP1: 119)

The history scholars' system of belief in question that agrees with reason is statistics (cf. EP2: 81). It is important to note that Peirce most certainly did not reject mathematics but merely the way it is employed: "Let it be clearly understood, then, that what I attack is the method of deciding questions of fact by weighing, that is by algebraically adding, the feelings of approval produced in the mind by the different testimonies and other arguments pertinent to the case" (EP2: 78). He went on to show that the method the history scholars in question actually employ is a negative form of 'have the cake and eat it.' In more technical terms, they negate the principle of non-contradiction, an operation which Peirce a few years later found to be the root cause of vagueness proper (cf. EP2: 351, "Issues of Pragmaticism") and which is employed by the "German critics" as an authoritarian advantage. Their argument goes as follows: anything that is even slightly improbable is to be rejected as entirely unlikely, anything entirely without improbability is also to be rejected as too likely (cf. EP2: 78). The problem is of course that this method does not follow any reliable procedures for establishing actual adequacy and will necessarily have to fall back on "the degree to which a hypothesis in regard to what happened in ancient Greece recommends itself to a professor in a German university town" (EP2: 81). Results derived from its application are based entirely on the "preconceived notions" (EP2: 81) a person holds in regard to something. This was considered

bad practice by Peirce, because the "use we should desire to make of ancient history is to *learn* from the study of it and not to carry our preconceived notions into it, until they can be put upon a much more scientific basis" (EP2: 84).

This central demand already touches upon the very core of modern hermeneutics, more specifically the problem of subjectivity in interpretation, and it is clear that Peirce was determined to do something about it. At the same time, he was well aware of the fact that there is no inquiry without prior experience processed and solidified to some degree:

> No man can recall the time when he had not yet begun a theory of the universe, when any particular course of things was so little expected that nothing could surprise him. (EP2: 87)

In regard to "preconceived notions," Peirce thus expressed two ideas. One is, as previously mentioned, that preconceived notions necessarily affect all statements regarding testimonies; the other is that preconceived notions form the backdrop of experience at some level in that they are a sort of cosmological component of subjectivity. If these conditions are unavoidable, then a method that "gets it right" must be capable of dealing with testimonies generally evaluated and reinterpreted by individuals and must employ procedures to alleviate subjectivity on both sides.[3] This is how Peirce claimed that "[e]xperience is our only teacher" without committing to the empiricist appropriation of the *tabula rasa* metaphor (CP 5.50, "The Universal Categories"). If understood in ignorance of such a phenomenal conception of knowledge, this claim might raise suspicion as to how detached Peirce really was from ontological dualism. What he was set to explain is that, as he put this elsewhere, "[n]o amount of speculation can take the place of experience" (CP 1.655, "Vitally Important Topics").

Another issue that is highly relevant today is the warning against what could be called "methods of immediacy." The "search for an argument that something must be" (EP2: 77) characteristic of the "German critics" is symptomatic of the way methods for interpretation are often designed. They generally base their approach on some form of close reading and deduct methodological necessities from that situation. This is not inherently wrong but runs the risk of creating cases of undecidability, which then have to be settled by way of decisions that employ the hermeneutical equivalent of brute force. In fact, early in LoDH, Peirce warned against this approach under the headline of interpretive "fulfillment" in regard to the conclusiveness of an interpretation:

> A rough approximation is sufficient to give the conclusion some value. But the further from fulfillment the conditions are, the further from any scientific value is the conclusion; and with sufficient time and space I would undertake to show that, in reference to ancient history, they are, in a large majority of those cases in which there is any room for two opinions, so far from fulfillment, that it not only becomes utter nonsense to talk of 'proof' and 'demonstration' – phrases perpetually in the mouths of these critics, – but, were there no better way of investigation, this method, taken as the general and regular method of treating questions of ancient history, must sink it [i.e., the study of ancient history] in all its details into the rank of idle surmise. (EP2: 78)

[3] As will become clearer, this is not a theory that is merely aimed at intuitive intersubjectivity like, for example, the idea of an "interpretive community" outlined by Stanley Fish where "[t]he only 'proof' of membership is fellowship, the nod of recognition from someone in the same community, someone who says to you what neither of us could ever prove to a third party: 'we know'" (1976, p. 485).

Balancing likelihoods is not dangerous per se, danger only occurs (1) if statistical methods are used deceptively to gloss over the fact that all the data computed actually derive from the subjective taste of the interpreter and/or (2) if the criteria for computation are themselves biased towards certain results. This is what makes statistical methods already problematic as soon as two *opinions* (by definition self-contained) are vaguely present and undecidability enters the equation.

The abovementioned "better way of investigation" would be the new abductive-(deductive)-inductive method that Peirce laid out in detail. It replaces the older conception of induction-deduction (not exclusive to Peirce), with "hypothesis" being an auxiliary operation, and situates the method squarely in Peirce's mature conception of "Pragmatism as the Logic of Abduction" (1903, EP2: 226–241). Based on this method, it is not sufficient to merely describe abstract operations that are basic to research. Instead, the new approach reorganizes these operations in such a way that they accord with actually existing contexts of inquiry. The fact that this reorganization was performed under the pressure of the hermeneutical situation is a surprising fact in itself and reasserts what is occasionally, and often very vaguely, claimed: the hermeneutic situation is basic to all forms of investigation. Frederik Stjernfelt writes:

> As implied by the Gadamerian term of 'Vorverständnis,' it is also the case in Peirce's circle that no pure pre-theoretical beginning is possible. The 'surprising fact' taken as first premiss in Abduction is, of course, only surprising as measured against certain expectations of a general, that is, theoretical kind, be they explicit or implicit. Peirce thus could be said to antedate Gadamer by more than half a century – but his account also adds a host of crucial details to the interpretative circle. (Stjernfelt 2007, p. 333)

A theory of the world, a network of preconceived notions, sometimes connected, sometimes isolated, is the foundation for the possibility of surprise itself, a "breach of regularity" (EP2: 88). This is also where Peirce and Gadamer part ways again, since for Gadamer, "preconceived notions" can never, even in theory, be overcome:

> Long before we understand ourselves through the process of self-examination, we understand ourselves in a self-evident way in the family, society, and state in which we live. The focus of subjectivity is a distorting mirror. The self-awareness of the individual is only a flickering in the closed circuits of historical life. That is why the prejudices of the individual, far more than his judgments, constitute the historical reality of his being. (Gadamer 2004, p. 278)

Both Gadamer and Peirce are largely in accordance in regard to the status of rationalistic subjectivity as an illusion that leads to tainted results in inquiry. But whereas Gadamer, in the face of methodological positivism, articulates the ontological conditions for methodological skepticism (thereby implicitly legitimizing the procedures of the "German critics"), Peirce, on the other hand, saw the unavoidable "preconceived notions" as the primary reason for engagement with the world, as both the condition and cause of inquiry. The fact that there even is such a thing as surprise that breaks the spell of the individual's horizon is reason enough to maintain a scientific position that is concerned with alleviating the strain caused by preconceived notions. Scientific inquiry itself, according to Peirce, begins with "an experimenter of flesh and blood" (EP2: 340, "What Pragmatism Is"), that is a knowing subject, capable of subjective experience within which the pursuit of truth is possible. "Flesh and blood", that is experiential

subjectivity, constitute the general "universe of discourse" for science, because the hypothesis which the experimenter examines has to be "a proposition relating to the universe environing the experimenter, or to some well-known part of it and affirming or denying of this only some experimental possibility or impossibility" (EP2: 340). The reaction to an 'experimental surprise' then is an abduction.

In LoDH, abduction already had the same structure as in the 1903 Harvard Lecture "Pragmatism as the Logic of Abduction," which illustrates the new conception in condensed form:

> The surprising fact, C, is observed.
> If A were true, C would be a matter of course.
> Hence, there is reason to suspect that A is true.
> (EP2: 231)

The central concern of LoDH is to demonstrate how to create the best *A*-s. The methodological proposal outlined for that purpose is perhaps Peirce's most comprehensive attempt; it is yet to be adapted to all branches of "Descriptive Psychics," however. Apart from its supposed practical value, it is also an important contribution to the study of abduction, especially in relation to its sibling "inference to the best explanation" (IBE), a mostly justificatory procedure for selecting the best from a variety of hypotheses that all seem applicable to a set of facts. The "step of adopting a hypothesis as being suggested by the facts, is what I call abduction" (EP2: 95), Peirce wrote, and in its most rudimentary form, abduction is "nothing but guessing" (EP2: 107).

William McAuliffe argues that abduction and IBE are not the same and should not be confused (as is rather often the case) and takes issue with the conciliatory suggestion that "later in his life, Peirce used "abduction" in a wider sense to include hypothesis generation and selection for testing" and refutes the compromise by claiming that Peirce "rejected his earlier statements, because they confused abduction with induction" (2015, p. 305). But in LoDH, Peirce described this process as a "mode of suggestion by which […] the facts suggest the hypothesis […] by resemblance" (EP2: 106) and carefully distinguished it from "the mode of suggestion by which in induction the hypothesis suggests the facts […] by contiguity" (EP2: 107). As he put it in "Some Consequences of Four Incapacities":

> Consider a state of mind which is a conception. It is a conception by virtue of having a *meaning,* a logical comprehension; and if it is applicable to any object, it is because that object has the characters contained in the comprehension of this conception. (EP1: 40)

Put generally, abduction is a metaphorical process in the hypoiconic sense (EP2: 274). A diagram (the hypothesis, consisting of *possible* actual relations) is mapped onto something else in order to visualize its causal configuration. Since it generalizes the object, it is also schematizing to a variable degree. This still happens within the domain of firstness, speculation, and possibility, but already at this stage, unlimited speculation can be held in check based on certain criteria, such as hypothesis *selection* (see EP2: 112). In other words, an abduction is regulated by a "universe of discourse" which inhibits speculation that is not generally useful.

Much depends on the slight ambiguity of the term "adoption" (used also in later statements on abduction, e.g., EP2: 231), which simultaneously refers to the creation as well as the selection stage of the process. In this context, to adopt something

simply means that it is taken up, whether an original creation or something that existed before. This ambiguity can be taken to mean that the term abduction refers to either a very rudimentary solitary flash of insight or a complex process of creative scientific *progression*, although it does not in itself constitute scientific *progress*. It mostly belongs to the context of discovery and has helped to set a trend for its thorough investigation (Liatsi 2006, p. 11).

Another central point that McAuliffe makes cannot be stressed enough though: Peirce was deeply invested in finding suitable economic criteria for the adoption and modification[4] of hypotheses, and McAuliffe's suggestion that abduction should be employed as a means to stratify the selection of hypotheses for testing according to their generality is contained in LoDH in its entirety. LoDH thus lays out the first complete version of Peirce's mature conception of abduction (Fann 1970, p. 41). It is not identical to IBE but rather contains basic IBE operations tailored to the purpose of discovery, although it is perhaps not entirely useful to draw that distinction definitively. The main reason is that abduction, as conceived of in LoDH, is now in fact a very comprehensive process that contains the invention and selection of hypotheses (cf. also Pietarinen 2006: 407), while at the same time ensuring that they ascend to a sufficiently high level to "avoid the 'best of the bad lot' objection" (McAuliffe 2015, p. 315; the terminology is van Fraassen's 1989, p. 143) occasionally leveled against IBE when justifying which hypothesis to adopt.

If a method is to be of any use whatsoever, it should provide guidelines which help to facilitate inquiry, for "the object of a logical method is to bring about more speedily and at less expense the result which is destined, in any case, ultimately to be reached, but which, even with the best logic, will not probably come in our day" (EP2: 85). While abduction "is merely preparatory" (EP2: 106), Peirce actually demands considerable preparation (and justification) before the actual testing can begin. The most important economic considerations (for they concern the interrelation of hypotheses among each other as well as to the facts, cf. EP2: 113) which Peirce considered requisite for the valuation of a hypothesis are caution, breadth, and incomplexity (cf. EP2: 109).

The quality of caution of a hypothesis is attained by not asking too many misdirected questions and involves the operation of the splitting of hypotheses into smaller components. Peirce invoked the model of the game "Twenty Questions" (an idea or object conceived of by some and unknown to others has to be guessed by asking a limited set of guesses), which could point to the fact that Peirce thought this operation to be quite self-evident. Even if big questions motivate inquiry, they should be analyzed into sets of smaller questions that are easy to answer. (cf. EP2: 109) This can also be done by dividing why-questions into yes-no-questions (Pietarinen 2006, p. 407).

The quality of breadth introduces the ideal of generality into inquiry. It is "correlative to the quality of caution" (EP2: 110) in that the "cautious" hypotheses should be formulated in such a way that they could also apply to other subjects. This is achieved by applying any given hypothesis to other seemingly distinct but similar phenomena and by tracing out the consequences of that hypothesis for that phenomenon.

[4] A possible alternative explanation for this confusion is that Peirce perhaps was not entirely certain himself at that point in time whether abduction merely meant the creation of hypotheses or whether it included the selection among various hypotheses, or whether this is not in fact the same thing, as was later suggested by Fann (1970), p. 42).

The third quality, incomplexity, silently invokes Peirce's earlier oft-cited principle "Do not block the Way of Inquiry" (EP2: 48, "The First Rule of Logic"). Incomplexity is required to facilitate the further development of any given hypothesis in the face of its inevitable supersedence. The quality of incomplexity is thus directly connected with the hermeneutical principle of leniency (*Nachsichtigkeit*) which in turn connects it to Peirce's conception of critical common-sensism (laid out in EP2: 346–354, "Issues of Pramaticism"; in more detail: Liatsi 2006, pp. 140–148, 157–161).

There is then, of course, always the danger that these qualities, if they were sought to be realized without additional guidance, would lead inquiry astray. According to Peirce, this can be avoided by the application of a set of six rules, which also serve as a useful summary of the entire section of the treatise concerned with abduction (cf. 113–4):

1. Hypotheses should explain "all the related facts."
2. Hypotheses should treat "principal testimonies" as "true"; this is the necessary result of the "instinct to believe that testimony is true without which society could not exist": to believe that witnesses are falsifying is a "mark of inexperience."
3. Hypotheses should only include probabilities that are "strictly objective."
4. Hypotheses should be split up and tested as such.
5. Undecidability regarding two or more hypotheses should be resolved by "enlarging the field of facts."
6. Hypotheses that can easily be tested alongside others should be considered.

Apart from showing that even the preparatory step of any given investigation can be very complex and intricate, Peirce's mature conception of abduction as experiment (a method of inventing, selecting, manipulating, and combining hypotheses) also shows that the distinction between discovery and justification is even vaguer than generally assumed. However, while these rules make Peirce's "logic of drawing history from ancient documents" a well-rounded affair, they can also be the source of much bewilderment. For example, what exactly are "principal testimonies"? How far does the field of "all the related facts" stretch, especially when it should be further enlarged for the resolution of cases of undecidability? This matter becomes even more perplexing when, judging from the fact that the treatise touches upon the foundations of hermeneutical inquiry in general, one is led to assume that it is in fact relevant for methodological questions across a wide variety of interpretive sciences, and by extension, to all interpretation in science. The easy answer would be to assume that while the research situation established in LoDH is indeed that of hermeneutics in general, the methodological guidelines presented are tailored specifically to the study of those testimonies that render "ancient history" accessible and, ultimately, verifiable in a pragmatistic (critical common-sensist) way. But perhaps "testimonies" can be taken to mean more than just testimonies. After all, Peirce's critique of the "German method" seems almost uncannily contemporary.

Adapting Hermeneutics

It is generally thought that the theory of textual interpretation has moved on since its positivist heyday in the early and mid-twentieth century. The resurgence of hermeneutics initiated by the "Gadamer vs. Derrida" debate and, on their backs, the Yale School of Criticism and others have stirred up the formalist movement and turned the whole affair around. This resulted in a

sense of insecurity regarding the business of interpretation, which, if nothing else, helped to create an acute awareness on all sides of the many divides within the discipline of literary studies of the relative impermanence of any interpretation and, even today, scientific women and men like Andrea Albrecht and Lutz Danneberg hold that there is never a definitive criterion for the closure of an interpretation even in the context of a chosen concept of meaning and interpretation. Any given approach always risks indeterminacy (2016, p. 11).[5] It seems to be the logical thing to assume.

Yet, one thing has long endured: the focus of theories of interpretation on a quasi-Cartesian situation that starts with the reader and the self-contained text. If not in practice, then at least in theory, none of the methodological assumptions go beyond that point of reference. And even those approaches that operate within the hermeneutical framework seem uncertain as to the legitimacy of going beyond the vantage point of the text. Thus, when Markus Willand, after examining historical conceptions of adequacy, concludes that the concept is merely suited to *evaluate* modes of exegesis as a soft criterion of literary theory (2016, p. 195),[6] he argues precisely from that particular point of view that prefers close reading (in a wider sense) over evaluative strategies that factor in veritable sources outside of the immediately available data.

Jan Faye, on the other hand, is critical of the hermeneutical tenet that "understanding is associated with linguistic meaning and that all understanding is historically determined" (2016, p. 38) but still entertains the concept of "background assumptions" (Faye 2016, p. 44). He supports the idea that "interpretation can be viewed as the entertainment of a hypothesis that gives us further understanding by connecting what is not understood with what is already understood" (Faye 2016, p. 44) and that "interpretation is a reaction to something incomprehensible, as one tries to understand it by producing an interpretive hypothesis" (Faye 2016, p. 46). His "naturalistic perspective", as he calls it, is extremely interesting in that it "rejects the hermeneutic premise that because all human experience is linguistically grasped, experience is always a result of an interpretation" (Faye 2016, p. 46).[7] This is highly relevant for the way in which preconceived notions are present to the individual. Yet, his view still leads him to restate the old idea that "recovering the author's concrete intention from the text" will "transcend the historicity of understanding" (Faye 2016, p. 53). In this regard at least, he falls back on a narrow intentionalist framework to reaffirm the old prejudice that the purpose of any theory of interpretation is first and foremost to guide a reader vis-à-vis the text in front of them.

Another contemporary approach is Thomas Petraschkas invocation of IBE proper (which he traces back to Peirce). He portrays IBE as a method that selects the single most effective hypothesis from a heap of possibilities while discarding all the others in the process (2016, pp.

[5] "Es gibt auch kein Kriterium der definitiven Abgeschlossenheit des Interpretierens eines Werks oder einer einzelnen Stelle, selbst im Rahmen einer gewählten Bedeutungs- und Interpretationskonzeption." (Danneberg and Albrecht 2016: 11; for a detailed exposition of this matter see also Feil 2017)

[6] "Als Bewertungskategorie von (und nicht in!) Textinterpretationen kann 'Angemessenheit' aber wenig mehr leisten als den Modus dieser Textauslegung zu evaluieren. Die von Rescher behauptete Sicherung objektiver Interpretation ist durch sie nicht möglich (vgl. 2008); als weiches Kriterium literaturwissenschaftlicher Theoriebildung oder interpretativer Praxis wird sie jedoch zu Recht immer dann aufgerufen, wenn die Standards, Normen und Wissenschaftskriterien unseres Fachs wieder einmal zur Diskussion und vergleichbare Kriterien wie Plausibilität auf den Prüfstand gestellt werden." (Willand 2016, p. 195)

[7] The same argument is developed in the neo-Peircean school of biosemiotics. For instance, Cobley states that "[t]he idea that knowledge is 'constructed in discourse' with humans' apprehension of the world amounting to a mere figment induced by figures in language, arose out of the 'linguistic turn' and (post-)structuralism. As will be seen, the nominalism of the 'linguistic turn' is at odds with the Peircean realist perspective in biosemiotics. It also posits a definition of language based on 'figures of speech' and 'chatter' […] rather than the more sophisticated cognitive perspective in biosemiotics offered by language as modeling" (2016, p. 18).

145–146). Petraschkas does not specify where the hypotheses come from, i.e., whether they are made up by one individual (with a limited set of facts, influenced by their preconceived notions) or by several individuals (that are likely to discard other sets of facts based on individual preference, by their preconceived notions). He cites the criterion of "conformity to the text" (Petraschka 2016, p. 161) as a procedure for adequate selection, but only a little later in his argument he wonders whether "text" can actually be considered "data" in a strictly positivistic sense. His answer is that since the interpretation of a text cycles through the text multiple times, there is room for correction (Petraschka 2016, p. 164) and textual references are therefore generally reliable. In support of this claim, he also invokes the distinction between description and interpretation for his conclusion that radical methodological skepticism is unwarranted given that objective data exists, just not in interpretation (Petraschka 2016, p. 165). By constructing such a layer of objective data that precedes interpretation, Petraschka is trying to avoid the socio-cultural relativism that Gianfranco Marrone has only recently summarized in the claim that "[t]he text is not a given entity nor phenomenal evidence; it is the result of a double construction: a socio-cultural configuration before and analytic re-configuration afterwards" (Marrone 2017, p. 108). The result of this strategy, however, is a reliance on more or less meaningless data completely devoid of all awareness of any socio-cultural implications, which leads to the question: If there is no socio-cultural relevance in the first place, why start interpreting at all?

This is what all of the methods[8] outlined above have in common: they betray a preference—rooted in dualistic thinking—for discarding what has been decided against from a limited point of view.[9] As such, they are mere inversions of the myriad relativistic positions that they seem to target and seek determinacy by artificially limiting the scope of the interpreter. But there is simply no basis in practice to ground a method *for* practice by appeal to in supposedly pure standards *outside* of practice.

Peirce's method (abduction taken in conjunction with deduction and induction) can fruitfully be employed as a tool for primary textual interpretation, as Frederik Stjernfelt has shown (2007, pp. 327–343). As such, it is a useful heuristic tool for establishing precise and intersubjectively compatible initial interpretations of all sorts of data. But literary texts and a host of other cultural artifacts are not testimonies. There is no reason to suspect even the relative falsity of fictions like *Alice's Adventures in Wonderland*, for example. Claims to the truth or falsity of works of art are generally only established at the level of their interpretations, otherwise, according to convention, every element of a work of art should be treated as "true" in general.[10] Likewise, any data derived from empirical experiments means nothing without an

[8] The methodological proposals discussed all come from a single source, a special issue of the international DeGruyter *Journal of Literary Theory* on "Hermeneutics and the Philosophy of Science" (10.1, 2016. We consider these contributions representative approaches to the relation between hermeneutics and science.

[9] Anecdotal case in point: items of research literature (i.e., interpretations by others) are generally treated as secondary material, as sources that contain other points of view against which to struggle or which to evaluate, adopt, discard or perhaps supersede. Moreover, at least in the field of literary studies, the topic of 'other interpretations' is generally reserved for introductions to academic writing and not included in the myriad introductions to interpretation.

[10] There is the special case of unreliable narration, where the narrator is suspected to withhold information or betray a general indifference towards consistency in order to attain certain results. However, this type of narration is only possible because it can rely on narrative techniques like focalization and, more generally, only functions because in the interpretation of works of art, artifacts are treated as essentially underdetermined to a certain degree and in regard to its external world (an approach hinted at in the twentieth century by Roman Ingarden 1972). Moreover, the intentional withholding of information (as well as the *intentional* disregard for veracity) is itself a specialized version of more general rhetorical strategies that play with the *persuasio* of an interpreter.

accompanying interpretation, especially since the construction of a hypothesis that must necessarily precede every experiment is nothing but an interpretation that is to be actualized by the data derived from the experiment. And it is safe to assume that such preceding interpretations in experimental inquiry are as much the product of a person's or group's preconceived notions as are interpretations of artistic artifacts. Therefore, we believe that limiting the application to the primary reading of data (literary and otherwise) does not do the method justice.

We think that Peirce's method actually does away with two limits at the same time. The first is of course the restriction to any form of close reading that forces upon the interpreter the decision between a naïve relativism and an equally naïve realism. The second is that the dissolution of the ontological boundary between the object and its evaluative data is relevant for all scientific inquiry. Other than whirling the theory of interpretation deeper and deeper down the rabbit hole, the methodological proposal outlined in LoDH, while still the result of a strictly philological-historical problem, contains within it a number of ideas that point to a fundamental methodological continuity between the historical and all other sciences.

Adopting Hermeneutics

How can the logic "of drawing history" be put to use in general? Peirce's method is most effective when dealing with statements that are truthful, mostly because it is motivated by a method ('German criticism') that is itself the product of an overly strong sense of suspicion. A possible suggestion is that the term "testimony" can and should be expanded to include *interpretations* of all types of cultural texts (a concept freely adopted from Posner 1994). This is in line with Peirce's conception of the object of the method developed in LoDH:

> In the case of ancient history, the facts to be explained are, in part, of the nature of monuments, among which are to be reckoned the manuscripts; but the greater part of the facts are documentary; that is, they are assertions and virtual assertions which we read either in the manuscripts or upon inscriptions. This latter class of facts is so much in excess that ancient history may be said to consist in the interpretation of testimonies, occasionally supported or refuted by the indirect evidence of the monuments. (EP2: 113)

Testimonies contain the largest portion of the facts about ancient history in the form of assertions that due to their sheer mass actually constitute the object which only on rare occasions can be tested against the background of the actual object. This accounts for the fact that Peirce was so concerned with drawing history especially from testimonies, and it is also the reason why his method is rather lenient in regard to the necessity for fact-checking. It is acutely aware of the inaccessibility of facts in themselves. Habits (thirdness) require individual existents (secondness), which are or were at some moment in time and space empirically accessible and verifiable. Thus, the claim regarding historical inquiry made here is that the *actual* object of inquiry can be explored by means of abduction. On this account, contrary to the mainstream arguments in textual semiotics, all sorts of texts (primary as well as secondary and so forth) are to be understood as providing *direct* phenomenal evidence. This entails a continuity between experimental inquiry and reflection on data thus acquired and therefore between synthetic propositions that are derived a priori and those that are derived a posteriori.

Interpretations of data (textual and otherwise) generally bear most of the characteristics of testimonies: they are abstractive statements that contain portions of the object with

which they are concerned. They are, much like testimonies, selections, or perhaps cut-outs, of the object that react to surprising observations made vis-à-vis an object. Last but not least, they are, at least in part, motivated by the perspective of the entity making the interpretation. That third condition is also the reason why a (schematic) logic of drawing something from something is needed in the first place. While, as mentioned before, it is generally advisable to trust any statement before doubting it, all residues of perspective should, at least in the long run, be able to be eliminated: “one of the main purposes of studying history ought to be to free us from the tyranny of our preconceived notions” (EP2: 114), wrote Peirce, and this can be extended to mean that one of the goals of studying anything is to understand it better and not merely differently.

Among the most important features of Peirce’s theory of interpretation is the principle of leniency (*Nachsichtigkeit*) in regard to the acceptance of other interpretations (Liatsi 2006, pp. 140–148). This is best expressed through rule number 2, which states that it is generally a bad idea to discard hypotheses prematurely (admittedly, this still does not explain what “principal testimonies” could be adapted to mean). Leniency is related to the “enlargement” rule number 6, which is, in turn, a more practical rendition of rule number 1: “Explain all the related facts” (EP2: 113). But of course, the facts in hermeneutics do not in every case come straight from the source. Surprise originates from existing interpretations of texts as much as or perhaps even more than it originates from the text itself. This is in part due to attention (and lack thereof), which belongs to understanding in the “naturalistic view” outlined by Jan Faye, and in part to preconceived notions, which constitute the perspective of the individual interpretation. The attainment of “all the facts” is thus the result of a sublatory but not necessarily dialectical process that combines individual hypotheses and their corresponding sets of data. This is perhaps best thought of in terms of Peirce’s idea of “collateral observation, aided by imagination and thought” (EP2: 409), by way of which the object of a sign is rendered more tangible. A fundamental operation of any interpretative process that strives for greater clarity as well as greater expansiveness of perspective is thus the refusal to discriminate between ‘original’ and subsequent sources.

It is surprising that these considerations adopted from Peirce formulate a method that is rarely expressed in theories of interpretation. The philosopher Lutz Danneberg developed a model of context-based interpretation (the natural habitat so to speak of extra-textual interpretation) and included “testimonies of reception” (*Rezeptionszeugnisse*) as part of the extratextual context. Those are to be treated, according to the “assumption of neutrality” (*Neutralitäsannahme*), without any evaluative bias (Danneberg 1990, p. 90). However, the extent of the scope of these testimonies remains unclear. If it were to include all interpretative assertions regardless of proximity to the object, this would render Danneberg’s approach similar to the conception developed here. However, as the term “testimony of reception” in this case seems to imply, the assumption of neutrality only extends to documents in a (vaguely) closer textual vicinity of its source of origin (as such, it relies on the sharply delimited existence of “principal testimonies”). That this must not be the case has been shown, and it is likely that any given theory of context-based interpretation could benefit from the approach outlined here.

One big point of criticism that is often brought forth against hermeneutics in general is that their basic *modus operandi* is circular in a vicious way. It seems that according to Peirce, the great man of science, this is unproblematic as long as progression is synthetic (e.g., Riemer 1996, pp. 395–396). Other approaches, like Albrecht’s and Danneberg’s take on the matter of viciousness, show that the so-called “hermeneutic circle” (and its supposed viciousness) is

actually a very recent invention and should therefore actually pose no theoretical problem to the scientific status of hermeneutics. Apart from that, parts-whole relations have always been treated so as to avoid vicious regression (Danneberg and Albrecht 2016, pp. 31–32). However, the potential for vicious regression is already facilitated by a theoretical bias towards *immediate* interpretation. If every interpretation is conceptually treated as a sort of autonomous new beginning, then interpretation is inherently bound to repeat itself. Thus, if the method outlined in the "Logic of Drawing History" can be conceived of as truly universal, then the potential for some sort of circularity is basic to any inquiry whatsoever. But it is vicious only if the methodological core, namely that every interpretation will and must begin in isolation, is rooted in just that brand of Cartesian rationalism whose critique kick-started the philosophical project that Peirce pursued, i.e., pragmatism (cf. EP1: 125–6).

From this point of view, Peirce's 1905 "What Pragmatism Is" can be read as a provisional "conclusion" to the view on inquiry he began to outline in 1901. There, he presented a conception of experiments as continuous with one another, based on the idea that "every connected series of experiments constitutes a single collective experiment" (EP2: 339). Such a collection should not be thought of as circular or enclosed in itself, because "it is not in an experiment, but in *experimental phenomena*, that rational meaning is said to consist" (EP2: 340). Truth value, that is "[t]he rational meaning of every proposition," "lies in the future" (EP2: 340), not in a singular, past experiment. This means that truth value lies precisely in the interpretants of propositions (see also Stjernfelt 2014, p. 8), which, for us, is another way of saying that meaning (3) is the result of the reaction (2) to a surprising fact (1).

As it stands, everyone is of course free to take up their own lines of inquiry according to their taste, and it is likely that there are fewer scholars who subscribe to philosophical rationalism wholesale than scholars who subscribe to the preconceived notion that a method gives proper guidance only if it *immediately* leads to clarity and distinctness. However, the 'problem of hermeneutics' can never be solved by a single person sitting in a room with a book, adhering to a set of rules to reach the correct interpretation of that book (even if that is only the theoretical situation implied by a method), for that is precisely the problem of hermeneutics. Through all these considerations shines Joseph Ransdell's idea that Peirce's logic of inquiry is first and foremost a "logic of research acceptance":

> [T]he aim of the philosopher of science is not to provide an account of criterially-based conditions which must be met by researchers in making knowledge claims in their scientific field, such that, these conditions being met, the claim is in some sense justified or warranted ipso facto. The aim is rather to describe the norms of critical control implicit in scientific life which assure that the research claims made by people who routinely conform to such norms in their communication with their peers will tend on the whole toward truth – which is to say, toward increasing understanding of the subject-matter of inquiry both in breadth and depth. (Ransdell 2013, p. 539)

Hermeneutics, like science in Peirce's sense, is a fundamentally cooperative enterprise; its logic, like all logic for Peirce, is "rooted in the social principle" (EP1: 149, "The Doctrine of Chances"). This idea emphasizes the necessity of hermeneutical freedom in scientific inquiry. Pietarinen remarked that what previous modern philosophers, post-Cartesians, failed to assume, was "the possibility of the immanent dialogical or communicational character of logic" (2006, p. 53) which Peirce brought to light. Among other things, this reasoning is continuous with post-Peircean developments in biosemiotics (see Sebeok 2001, p. 71, 85): it allows us to regard adaptation in general as a hermeneutical matter. Recognizing hermeneutical operations

in adaptation, natural, or otherwise, refutes certain interruptions on "the way of inquiry" that post-Cartesianism took for granted and that led to dichotomizing the process of knowledge acquisition into a natural (which can well be unconscious) and educational (which is instructional and, therefore, necessarily conscious) undertaking. Reasoning, for Peirce, is a purposeful continuity of inferences, but its teleology does not limit it to consciousness (e.g., EP1: 28–55, "Some Consequences of Four Incapacities"; Stjernfelt 2014, p. 119–120). This also led to the development of a semiotically informed Peircean approach to education, where "'meaning-making' is not to be conceived of as merely mental response to, and conscious interpretation of physical events, but is constitutive of all forms of adaptation and progression" (Gough and Stables 2012, p. 370). To abduct, that is to change one's hypotheses about the world, is to (re)adapt. In this sense, 'interpretation of interpretations' is less a methodological as than an ethical principle designed to guide scientific life in general. It shows that efficient research does not suffer from expansiveness of scope of inquiry in interdisciplinary projects nor does it suffer from the careful hermeneutical training of researchers across the various scientific divides. Instead, it insures that research is not bound to repeat itself *ad infinituum* in the historical continuum of preconceived notions.

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