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Fallible inquiry with ethical ends-in-view – A pragmatist philosophy of science for organizational research

Abstract

The clash between positivist and constructivist research methodologies in organization studies has sent many researchers to look for a ‘third way’ in critical realism and more recently in pragmatism. Building on John Dewey’s work, this article develops a position where the fallible nature of all knowledge is acknowledged and the value of science is anchored to its ability to resolve genuine human problems. It is argued that this kind of ontological experientialism and epistemological fallibilistic instrumentalism offers the most original and defensible version of pragmatism as a philosophy of science. In it, science is seen as an outgrowth of ordinary inquiry, and thus it starts and ends in experiencing, is always constrained by fallibilism, proceeds utilizing abduction, and instead of ‘knowledge’ it produces warranted assertions. However, as pragmatist inquiry is always done with ends-in-view, pragmatism retains the possibility to evaluate the value of different theories and propositions, and thus sees scientific research as an inherently ethical activity. The position is contrasted to positivism, constructivism, critical realism, and more realist interpretations of pragmatism to show its uniqueness, and its basic implications for research practice are explained.

Keywords

Abduction, fallibilism, pragmatism, research methodology, research ethics

Introduction

Organizational researchers attempting to start an empirical inquiry face an inescapable choice as regards the ontology, epistemology, and nature of inquiry underlying their research. Whether one makes the choice implicitly or explicitly, these basic methodological assumptions influence what kind of research methods are appropriate, what kind of phenomena one is able to observe and capture, and what kind of results one can expect to find in the first place.

As regards these underlying dimensions, the basic choice has often been framed as one between a positivistic and modern research frameworks on the one hand, and more interpretive and postmodern frameworks on the other hand (see e.g. Hatch & Cunliffe, 2006; Chia, 1995). To highly generalize, in positivism the ontological assumption about there being one objective reality and the epistemological belief in the ability of sciences to capture something about this reality have contributed to an attitude of inquiry that seeks out “general theories about organizations and their members, which are reminiscent of the powerful universal laws found in the natural sciences” (Donaldson, 2003, p. 41). In recent decades, this attitude has been increasingly challenged (e.g. Chia, 1995) from a perspective that is based on a more constructivist ontology and interpretivist epistemology and that accordingly emphasizes the “practitioners’ lived experiences” (Tsoukas & Knudsen, 2003, p. 11) and how “models and theories purporting to account for organizational phenomena are not so much reflections of an objective reality as subjective constructions built from a variety of symbolic constructs” (Tsoukas, 1993, p. 323).

Accordingly, the contemporary epistemic odyssey has been characterized as the challenge of “trying to find a passage between Scylla – the rocks of dogmatic modernity – and Caribdis – the whirlpool of dispersed post-modernity” (Küpers & Weibler, 2008, p. 444). In here, several authors have suggested that pragmatism could provide the ‘third way’ through which the research journey could be navigated in beneficial directions while avoiding both extremes (Calori, 2000; Powell, 2001; Wicks & Freeman, 1998; see also Watson, 2012).

Despite indirect influence through “sociologized pragmatism” (Delanty & Strydom, 2003, p. 284) of C. Wright Mills (1940, 1967) and the Chicago school of sociology, the pragmatist tradition has had

surprisingly little direct influence on the social sciences (see Baert, 2003). More recently, however, it has started to inspire a growing number of sociologists (e.g. Joas, 1993) and organizational scholars within the study of organizational practices (Cohen, 2007; Simpson, 2009), organizational learning (Elkjaer, 2004; Simpson & Marshall, 2010), strategic management (Powell, 2001, 2002), organizational knowing (Cook & Brown, 1999) and organizational change and development (Carlsen, 2006). As regards research methodology, Wicks and Freeman position pragmatism as an alternative methodological position for both positivism and anti-positivism, arguing that through an epistemology where human purposes are highlighted, it can better incorporate ethicality and practical relevance into organizational research (Wicks & Freeman, 1998; see also Powell, 2001).

Based on these recent developments, one could argue that pragmatism holds the potential to become a distinctive research methodology within organizational research. However, for this vision to be realized, further theoretical elaboration is needed. Firstly, while many researchers make passing references to classical pragmatists, many have not come to appreciate its unique nature and the way it goes beyond the whole debate between realism and anti-realism. While there are more realist interpretations of pragmatism (see Rescher, 2003; Watson, 2010), along with David Hildebrand I see that it is the Deweyan experientialist version of pragmatism that is “more original and, indeed, more defensible” (Hildebrand, 2003, p. 5) than other versions of pragmatism as a philosophy of science. Accordingly, my primary aim in this article is to clarify the nature of pragmatism as a methodological position by offering a version of it that is mostly inspired by John Dewey and his mature position outlined in *Logic – A Theory of Inquiry* (1938), with additional support from those contemporary pragmatists who have followed in Dewey’s footsteps, particularly David Hildebrand (2003), Matthew Brown (2012), and, with certain caveats, Hilary Putnam (1990). I also discuss how this position differs from the more realist versions of pragmatism, and offer this Deweyan account as a version of pragmatism that I see as most fruitfully contributing to the methodological debates within organizational research.

The second major purpose of this article is to show how this Deweyan version of pragmatism, as compared to positivism, constructivism, critical realism, and also more realist interpretations of pragmatism, offers a distinctive position as regards ontology, epistemology and the nature of scientific inquiry. Pragmatism, as presented here, doesn’t fit into the dichotomy between positivistic realism and

constructivist anti-realism, but offers a novel perspective based on experientialist ontology and fallibilistic instrumentalist epistemology. In fact, in the case of Dewey it could be even more appropriate to borrow a term from Barad, and talk about “epistemontology” (Barad, 1998, p. 109; quoted from Iedema, 2007), because for Dewey, inquiry itself is primary and any ontological and epistemological commitments are entangled within and arise from this inquiry rather than stand outside of it as independent presuppositions. Deweyan experientialism thus stands as a methodological position of its own, and, with its emphasis on keeping ends-in-view throughout the inquiry, offers a unique vision of how organizational research should be carried out.

At the same time, this article offers also some clarifications into debates about abduction, which has provoked increased interest among organizational researchers (Alvesson & Sköldbberg, 2009; Locke, Golden-Biddle, & Feldman, 2008; Weick, 2005). With few exceptions (e.g. Locke et al., 2008), the meaning of the concept ‘abduction’ is often reduced to a single-sentence explanation (e.g. Wodak, 2004) that fails to capture the richness of the original notion, and stands silent about its underlying epistemology. As the notion of abduction emerged originally as part of pragmatist philosophy (see Peirce, 1903a), its role and way of working is best illustrated when it is embedded within a pragmatist notion of inquiry and within the epistemological position of fallibilistic instrumentalism. Pragmatism more often than not has been discussed without a reference to abduction, and abduction without a reference to pragmatism, despite the fact that both derive originally from the same philosophical background. In here I attempt to connect them by showing what is the place of abduction in the pragmatist notion of scientific inquiry and how this strengthens the case for both: pragmatism illustrates the underlying worldview from which the abductive inference stems, and through a discussion of abductive inference, one can learn more clearly what pragmatist epistemology means in terms of research practice.

To fulfil the aim of showing how Deweyan pragmatism offers a distinct methodological position for organizational research, I will start out with a more detailed exploration of what this version of pragmatism means in terms of ontology, epistemology and scientific inquiry, and how it is distinct from the more realist interpretations of pragmatism. This is followed by an examination of how science as a collective inquiry grows out of organic proto-inquiry and what is abduction’s role in this picture. I then discuss how this position differs from critical realism, and from constructivist understanding of

abduction. Having explored what pragmatism as a methodological position means in general, I conclude with a discussion about what it means in terms of research practice: what does it mean to conduct fallibilistic inquiry with ethical ends-in-view?

Pragmatist ontology and epistemology

Action ... is the way in which human beings exist in the world. (Joas 1999)

As stated, instead of the traditional choice between realist and constructivist options, the ontological and epistemological starting point in this article is pragmatist (Dewey, 1908; James, 1907a; Peirce, 1931). At the most basic level this means that experience is taken as primary; as human beings we can never escape our embeddedness within the world of experiencing into which we are thrown as actors. Experiencing itself must here be understood as an active process of exploration within an embodied stream of experience in which the more cognitive dimensions are just one part (Alexander, 1987). This means firstly that we are inescapably situated within a stream of experiencing that constitutes our human condition. “We happen to be humans existing in irreducibly human situations, located in a human world” (Pihlström, 1996, p. 17) and thus “the only natural starting-point, from which we can proceed in every direction” is the “world of man’s experience as it has come to seem to him” (Schiller, 1912, p. xxi). Secondly, we are engaged with our lives; our relation to the stream of experiencing is active. Some experiences are more preferable for us than others and our sense of agency places us in a position where we feel that we can influence our future experiences through our choices of action. Ontologically, pragmatism means an attitude of orientation that takes seriously the fact that as human beings we are living in a world in which we need to act (see e.g. Putnam, 1994, p. 152). Accordingly, the world is not primarily something to be observed but something within which we already aim to live our lives as best as we can. The ontological position of pragmatism could thus be labeled – as opposed to realism or constructivism – as *ontological experientialism* (see McGilvary, 1939).

As regards epistemology, pragmatists see that all our beliefs are in the final analysis future-oriented “rules for action” (James, 1907a, p. 23). As we are within the world primarily as actors and only secondarily as thinkers, cognitive knowledge itself is seen as one special form of action, which “like any other action, brings about changes to the world” (Baert, 2003, p. 97). Accordingly, Dewey wants to replace the words

belief and *knowledge* with the term *warranted assertability* to emphasize the ever-evolving nature of human convictions (Dewey, 1938, p. 7). Warranted assertions are outcomes of inquiry that are so settled that we are ready to act upon them, yet remain always open to be changed in the future.

Anchoring the value of knowledge to the practical life of particular human beings, pragmatists come to embrace fallibilism (Dewey, 1938, p. 40), the doctrine according to which “we cannot in any way reach perfect certitude nor exactitude. We never can be absolutely sure of anything” (Peirce, 1931, vol. 1: 147–149). Instead our knowledge “swims, as it were, in a continuum of uncertainty and of indeterminacy” (Peirce, 1931, vol. 1: 171). The possibility of ever reaching absolutely certain and final knowledge is thus closed for a pragmatist.

On the other hand, not all forms of understanding are of equal value. Some interpretations of reality seem to allow us to better succeed in our projects (James, 1907a, p. 23). As a trivial example, there seems to be a strong practical necessity of accommodating our movements to robust physical facts; running against a concrete wall will hurt and not lead us to the place we were heading for (Määttä, 2006, p. 13).

Accordingly, in pragmatism any warranted assertion or theoretical construct is judged by its capacity of advancing the particular projects and goals human beings have in their lives; thus some of them are judged as better in pragmatic terms (James, 1907a, p. 88). While this doesn’t provide an objective or absolute standard for evaluating warranted assertions, we do not face full relativism; from the point of view of particular human beings some frameworks are always better than others; they have been found to be more suitable as guiding frameworks for our actions in bringing forth the kind of results we are aiming at. In pragmatism, increased knowledge is thus not about getting the correct “representation of reality in cognition” but is an expression of an “increase of the power to act in relation to an environment” (Joas, 1993, p. 21). Conclusions reached through inquiry are thus like maps of the experiential world, they give us tools to interpret it in ways that help us orient ourselves within it. Ultimately, we can only talk about these maps and how well they guide our experience. There is no need to talk about the ‘external world’ beyond the maps, as there is nothing beyond the experiencing and our mapping of it we could ever be in touch with in any case. However, when the maps have “repeatedly proved effective”, they serve as stable conclusions on which future inquiry can build on (Dewey, 1938, p. 521), thus acquiring a sense of “apparent solidity” (cf. Chia, 2000, p. 514).

It is worth emphasizing that pragmatic instrumentalism does not mean that we can simply start believing in anything we find suitable at any given moment. We come to 'believe' certain assertions through the process of inquiry, and in this process of inquiry we rely on certain ways of arriving at conclusions that have in the past proven to be more reliable than others. Thus, for any assertion to be warranted even within our own system of meanings, we have to come to it through a process of inquiry that is credible according to our own standards. As Deweyan instrumentalist I can't 'will myself to believe' that there is a white elephant in front of me without abandoning the whole apparatus of standards of inquiry, which I rely on in my everyday life (cf. James, 1896). Moreover, single assertions are tied up with larger meaning systems and it is these systems as wholeness that are judged as more or less reliable maps to navigate in the world in a suitable way. As Peirce (1877, p. 14) puts it: "what is more wholesome than any particular belief is integrity of belief." Furthermore, and as explained in more detail later, individuals don't come up with their convictions in isolation, but as parts of a community of inquirers which further sets norms for reasoned justification of one's warranted assertions (see Dewey, 1938; Hildebrand, 1996). All in all, we might call the epistemological position of pragmatism *fallibilistic instrumentalism*.

The difference between experientialist and realist readings of pragmatism

To clarify further the ontological position of Deweyan pragmatism, it is instructive to contrast it with more realist readings of pragmatism. For example, Watson promotes what he calls *Pragmatic Realism* (Watson, 2009, 2010). For him, the central tenet of pragmatism is its idea that knowledge is not about representing the world, but coping with the world. However, "if the world is something to be 'coped with', then it clearly must have a reality" (Watson, 2010, p. 917). Accordingly, he quotes William James' statement that the notion of an independent reality "lies at the base of the pragmatist notion of truth" (James, 1908, p. 455). It should be noted that also Van de Ven uses the same quotation to establish James as an ontological realist (Van de Ven, 2007, p. 56). This commitment to realism is also visible in Watson's idea that one theory about organizations can be "pragmatically superior" to another "because anyone acting on the basis of the former knowledge would be less likely to succeed in whatever project they were engaged in than would someone being informed by the latter theorising" (Watson, 2010, p. 917). He thus insists that one theory can be better than other for anyone "regardless of their interests and concerns"

(Watson, 2010, p. 926), instead of considering the possibility that some concepts and theories might be more suitable to advance certain aims and others better fitting for some other aims. In his pragmatic realism, one map of organizational reality can be better than all the others, for anyone and for any purpose.

However, if we look at the full quotation from James that Watson and Van de Ven refer to, we see that James (1908, p. 455) stated: “This notion of a reality independent of either of us, taken from ordinary social experience, lies at the base of the pragmatist definition of truth.” It turns out that what James meant is that as pragmatists we cannot deny the ordinary sense in which the word ‘truth’ is used, we have to build our understanding of truth taking into account the ordinary sense in which two persons talk about a desk in front of them as having independent existence (James’ example). This, however, doesn’t mean that one should be content with this notion of truth. In the short article that Watson quotes, James (1908, p. 456) ends with the statement that “you cannot define what you mean by calling them [statements and beliefs] true without referring to their functional possibilities. These give its whole logical content to that relation to reality on a belief’s part to which the name ‘truth’ is applied.” In his other treatments of truth, James comes to denounce the popular notion that “true idea must copy its reality” and that “truth means essentially an inert static relation” (James, 1907b, p. 142). Instead, truth is something that “*happens* to an idea”, something becomes true in experiential terms (James, 1907b, p. 142). Accordingly, James was an explicit proponent of metaphysical pluralism (see especially James, 1909): He allowed for a diversity of views about a phenomenon without any necessity of them converging into one. Given this fuller view of James conception of truth, it seems to be a misconception, or at the very least an unwarranted simplification, to read James as a proponent of ontological realism.

If one wants to build a realistic conception of pragmatism, one would be better off by starting with Peirce:

“There are real things, whose characters are entirely independent of our opinions about them; those realities affect our senses according to regular laws, and ... we can ascertain by reasoning how things really are and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion.” (Peirce, 1877).

Peirce had strong faith in the power of scientific method and believed that truth is what would ideally be found at the end of the scientific inquiry (Peirce, 1878). Peirce thus can be labeled as an ontological realist and contemporary pragmatists like Nicholas Rescher (2003) have followed in his footsteps. However, even in Peirce's case it is contested whether we can ever reach these truths about reality, given his firm commitment to fallibilism (a term he himself coined) where "we never can be absolutely sure of anything" (CP 1.147-149, c. 1897). Given this fallibilism, we can ask what role could these 'real things' play in any actual assessment of the merits of different scientific theories.

As regards Dewey, his starting point is engaged organic life. Life takes place in and through environment, but it must be acknowledged that engagement is primary and any dualism between, for example, 'subject' and 'environment' is something that can only be found through inquiry rather than being something that predates it (Dewey, 1938, pp. 25, 33). This active engagement within "a universe of experience" that is a precondition for any "universe of discourse" (Dewey, 1938, p. 68) gives rise to organic precognitive activities from which, through symbolic language, more rational and deliberate engagement with the life-world becomes possible (Dewey, 1938, p. 19). Dewey is strict about not granting independent existence for anything beyond what is found through inquiry. For him, even such mainstays of logic as the laws of contradiction and excluded middle are not to be taken as *a priori* truths, but rather as "conditions which have been ascertained during the conduct of continued inquiry to be involved in its own successful pursuit" (Dewey, 1938, p. 11). Even though inquiry might lead to certain conclusions about the nature of the world to be taken as "*operationally a priori* with respect to further inquiry" (Dewey, 1938, p. 14) no independently existing 'real' things have a place within Deweyan ontology. The value of any proposition about reality is "teleological, experiential, not fixedly ontological" (Dewey, 1906, p. 473)

Given that pragmatism is not a strict doctrine but rather an attitude or method of thinking (Dewey, 1908; James, 1907a), there is no point in arguing that either realism or experientialism is the one *true* interpretation of pragmatism. They represent different strands of the broad school of pragmatism, but what is shared by all schools of pragmatism is the insistence that knowledge emerges from our actual living: "our rules of method and our ontology emerge out of our struggle to adjust to the problems of living" (Hogan, 2009, p. 386). This experiential starting point pushes ontology into a marginal position in pragmatism: Even for pragmatists subscribing to realism this is an end-product rather than a foundation

for inquiry. Thus characterizing pragmatist ontology as experientialist brings out its unique characteristics better than a realist interpretation of pragmatism, which is prone to be misinterpreted. Therefore I have chosen here to defend this experientialistic interpretation of pragmatism, which is most indebted to John Dewey, who makes clear that “knowledge as such can only be a generalization of the properties discovered to belong to conclusions which are outcomes of inquiry”, without any reference to something external or “metaphysical” (Dewey, 1938, p. 8). Similar accounts are also to be found from many contemporary proponents of pragmatism (e.g. Hildebrand, 2003; Putnam, 1990). The way this Deweyan experiential pragmatism goes beyond realism and antirealism is summarized by Tschaep (2011, p. 197):

“The realist makes mistake of taking conceived objects – scientific objects – as fixed forms or essences, and the antirealist makes the reactionary move of simply denying or remaining agnostic to the existence of such objects. The mistake by both is to relate the practice of science to some reality superior to experience. By including the existence of conceived objects in specific types of inquiry that relate to experience, Dewey overcomes this dilemma by affirming the existence of objects – observed and unobserved – as ‘what they can do and what can be done with them’ within our experience of experimentation.”

Science as an institutionalized form of collective inquiry

As regards science, Dewey acknowledges no categorical difference between scientific inquiry and other forms of inquiry: “Sciences themselves are outgrowths of some phase of social culture, from which they derive their instruments, physical and intellectual, and by which their problems and aims are set” (Dewey, 1928, p. 311). To illustrate how science grows out of our everyday experiencing, I propose that we distinguish between three modes of inquiry: *organic proto-inquiry*, *inquiry with scientific attitude*, and *collective scientific inquiry* (see Figure 1). The main inspiration for the discussion herein is Dewey’s book *Logic: The theory of inquiry* (1938), although the synthesis reached draws also from other sources and more contemporary debates.

Organic proto-inquiry

“Upon the biological level, organisms have to respond to conditions about them in ways that modify those conditions and the relations of organisms to them so as to restore the reciprocal adaptation that is required for the maintenance of life-functions.” (Dewey, 1938, p. 60)

In pragmatist experientialism, the actual experiencing and the ability to navigate within it is taken as primary. As living organisms, we react to our experiential conditions by altering our behavior in order to bring forth desired experiences. Much of this experiencing and our activities within it take place on a precognitive level without any deliberate inquiry (Dewey, 1938), in which case we might call it a proto-inquiry (Burke, 1994, p. 28). This kind of proto-inquiry starts with an indeterminate or problematic situation where some disturbance or felt uncertainty in our experience leads us intuitively (or should we say habitually) to alter our behavior (see figure 1). If this leads to desired experience, we continue. If it leads to undesired experience, we make further alterations in behavior. This level of organic and prereflective proto-inquiry is thus about behavioral response of the organism to its envioning conditions (cf. Hickman, 1998, p. 172).

To illustrate (see Dewey, 1938, p. 166), while walking on a road we suddenly note a car bearing down upon us in full speed (indeterminate situation). Before even realizing what is happening, we automatically jump to the side (alter behavior) and are able to avoid the fatal collision (improved situation). No cognitive or discursive thinking is needed for this to happen. Similarly, the slight adjustments we constantly make while standing to maintain balance are habitual reactions we have learned to do intuitively, without any need for reasoning or judgment.

Inquiry with scientific attitude

Fortunately, the nature has been so generous as to provide human beings with the capacity for reflection and reasoning (Dewey, 1929a). Instead of instinctually, habitually, or randomly altering behavior, human beings as reflective organisms can plan and think through their responses to the envioning conditions. This makes them more able to handle indeterminate situations and get desired outcomes, because reflective inquiry makes it possible to “‘rehearse’ or try out activities before making a final irretrievable commitment to some overt action” (Hickman, 1998, p. 185). There are different ways one can reflect and come to hold certain convictions, starting with common sense inquiry (Dewey, 1938; see also Peirce, 1877), but here we are interested in only one, the inquiry with scientific attitude.

Inquiry with scientific attitude starts, as any other inquiry, with an indeterminate situation in which there is the sense of something being wrong: there is some disturbance or irritation, or something is blocking

one's path and one is not able to accomplish something one wants to accomplish (Dewey, 1938, p. 105).

Sometimes we can't even articulate what is wrong. Indeed, "usually, we will feel something is wrong before we know it is." (Hildebrand, 2005, p. 351).

But instead of direct behavioral response, this triggers a process of reflective inquiry in which we work with the indeterminate situation and our current warranted assertions, experiences and ways of reasoning in order to produce some solution or harmonization of the situation. Inquiry, for Dewey, is reflective and he defines it as follows:

"Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole" (Dewey, 1938, pp. 104–105).

Thus, in scientific inquiry one starts from a situation in need of explanation: Given one's current understanding, there is something surprising or disturbing; something one wants to understand better or is unable to accomplish. This starts off an iterative exploration where one examines one's current conceptions, the experiences one has had, and perhaps gathers some new experiences, in order to find a way to look at the situation that resolves the tensions and shows a way forward (see figure 1).

What makes this inquiry scientific is mainly a healthy attitude of doubt: "The scientific attitude may almost be defined as that which is capable of enjoying the doubtful; scientific method is, in one aspect, a technique for making productive use of doubt by converting it into operations of infinite inquiry" (Dewey, 1929b, p. 228). All our conceptions, convictions and ways of conducting inquiry have grown out of past inquiries, where they have shown their capacity to deliver sound conclusions. But in pragmatism past success is not a guarantee of future performance. This means that one must remain open to reconsider all 'ingredients' of the indeterminate situation: one's current concepts and theories, one's perceptions, the rules of inquiry one has adopted, and even the way one characterizes the problematic situation. Especially this last point is important, because certain ways of characterizing the problematic situation make one look for certain kinds of solutions, but often one's initial characterization might be misguided and inaccurate, and thus might be the main reason that keeps one stuck (Dewey, 1938, p. 108; Hildebrand, 2005, p. 351). Scientific inquiry thus involves an iterative and co-evolving movement between one's current conceptions and ways of reasoning, and all the experiences or provisional data one

has about the indeterminate situation. As this is where the abductive part of inquiry takes place, I will describe these aspects more carefully later on in this article, but in general this scientific inquiry is about an attempt to resolve the situation by finding a way to unify all the experiences and conceptions about it in order to reach *warranted assertibility*, the sense that one has enough reasons to accept a conclusion to use it as a resource in future inquiries and actions (Dewey, 1938, p. 9).

But warranted assertibility is not the end of inquiry. Instead, when the process of reasoning has brought us to some preliminary conclusions, it is time to apply them to our existential situation to test, whether they bring us out of the indeterminate situation and towards our aspirations. Warranted assertions can thus be seen as *hypotheses* we see as so secure that we are willing to alter our behavior according to their guidance to see whether this brings us to our desired experiential outcomes. If not, then the inquiry continues. As Hickman puts it:

“There is thus first an ‘excursus’ from the existential situation into deliberation, and when deliberation has reached its end, its time for ‘recursus’ in which the results of abstract thinking are brought back to the existentially doubtful situation that triggered the inquiry in the first place”
(Hickman, 1998, p. 184).

Collective scientific inquiry

The feedback loop between indeterminate situation and behavior is made even more complicated when we include other people in the picture (see figure 1). In a sense, all inquiry is collective as our ways of conducting inquiry and engaging with the world are embedded in traditions, institutions, and customs to the extent that it is fair to say that they “are encompassed in an environment that is culturally transmitted” (Dewey, 1938, p. 43). As compared to common sense inquiry, science provides a more formal and institutionalized version of inquiry, but it is not categorically different from any other forms of inquiry. As Dewey (1938, p. 66) states: “Scientific subject-matter and procedures grow out of the direct problems and methods of common sense, of practical uses and enjoyments.” What sets science apart from other forms of inquiry are its historically developed rigid standards, assessment procedures and institutionalized ways of involving others in the inquiry through which the scientific community aims to ensure the warrantedness of its assertions (Dewey, 1938). Individual scientists are tied to the larger community through a variety of formal and informal mechanics such as the peer review system, which

makes the production of scientific conclusions essentially a collective process. Science, then, is a highly sophisticated form of collective inquiry, the procedures of which have been shaped by generations of inquirers attempting to find the most reliable methods to make sense of the world together.

In science the starting point for inquiry is “increasingly remote from the situations of use and enjoyment in which it originated” (Dewey, 1938, p. 71), because one has to demonstrate that the problem at hand has some general interest (Problematizing). As Mills states, “it is the felt threat to cherished values [- -] that is the necessary moral substance of all significant problems of social inquiry” (Mills, 1967, p. 175). The path from this problematic situation into warranted assertions is similar to individually conducted inquiry, but in addition to adhering to one’s own standards of inquiry one has to demonstrate adherence to the collectively accepted standards of one’s scientific field. This means that explicating one’s reasons for reaching whatever conclusions one has reached becomes essential (Arguing). One must be able to state out the reasons that make one’s path of inquiry plausible and convince the scientific audience of the soundness of one’s conclusions. One needs to also convince the community that one’s conclusions have the potential to influence practice positively (Convincing). *Convincing* here should not be interpreted as a mental concept, but rather it refers to those practices that the researcher engages in in order to gain the tentative acceptance of the hypothesis proposed. These practices include, for example, writing the article and refining its argumentation, as well as answering concerns raised in the peer review process. If one’s path of inquiry is successful on both individual and collective level, this might lead to the tentative acceptance of one’s conclusions by the scientific community, which brings one’s current inquiry to a satisfied resolution.

Here it must be remembered that the ways of reasoning in science, as well as scientific methods more generally, are never final, but rather “instruments that have been developed in the course of inquiry” and that have proven successful in those past inquiries, given their idiosyncrasies (Hickman, 1998, p. 169). Currently accepted practices of problematizing, arguing, and convincing are “formulations of ways of treating subject-matter that have been found to be so determinative of sound conclusions in the past that they are taken to regulate further inquiry until definite grounds are found for questioning them.” (Dewey, 1938, p. 13). We use our currently accepted ways of reasoning to evaluate scientific contributions, but at the same time must remain open to reassess these standards in the face of new developments. A common

byproduct of scientific inquiry is improved tools and ways of reasoning for future scientific inquiries.

Instead of being “mastered by ‘method’ or ‘theory’”, social scientist needs to be “his own methodologist and his own theorist, which means only that he must be an intellectual craftsman” (Mills, 1967, p. 121).

It needs also to be emphasized that the process of scientific inquiry is in practice rarely as linear as depicted in figure 1, but rather involves iterative back-and-forth movement between different parts. The feedback one gets from the scientific community leads often to reassessing one’s founding assumptions as regards the problematic situation in the first place, and thus the individual and collective levels of inquiry are in constant interaction with each other.

Finally, science, as a *human* enterprise, is restricted by the same fallibilism as other forms of human inquiry. Despite its sophisticated methods it cannot offer any royal route to truth. So even scientific theories can ultimately be judged on nothing else than with their bearing on the pragmatic challenges of our everyday life. Following Shields (2003) and Boisvert (1998), we might illustrate the way science is connected to practice by using the metaphor of map-making.

Map-making is a craft that ultimately aims to serve the people by making reliable tools for guiding the users to their chosen destinations. Mapping by necessity involves selectivity, choice and generalizations that make the map more useful for the user, but at the same time inadvertently distorts the wholeness of what it tries to depict (Shields, 2003, p. 513). The map “is instrumental to such operations as traveling” (Dewey, 1938, p. 402), thus its aim is not to represent ‘reality’ as such, but rather to pick out and highlight certain features of the experiential terrain that are relevant from the point of view of the intended usage of the map. For example, the voice of a GPS auto navigator is a form of map: It remains silent, except for the moments when it needs to guide the driver to make turns. There is thus no ‘neutral’ or ‘objective’ map but maps are always constructed to serve certain interests: by highlighting the road numbers, junctions and road sizes certain maps are designed to be useful for car drivers, while accurate contour lines are essential for someone wandering in a forest. Maps are thus always provisional and open to revision and improvement: “no single charting of territory, whether physical or intellectual, should be considered fixed and final” (Boisvert, 1998, p. 151). Therefore the map-makers must be aware of both the terrain they depict as well as the interests that guide this depicting: “The worst sort of one-sided biases

can be avoided by keeping in mind the twin ideals of fairness to the data and self-conscious awareness of one's interests" (Boisvert, 1998, p. 151). Similarly, science can be seen as a craft that aims to serve the public by providing tested theories that people can rely on in their interactions within their experiential worlds. If common sense inquiry is about asking the man on the street for guidance in reaching one's destination, scientific inquiry aims to offer a more generalized, tested and strictly warranted assertion on how the terrain should be looked at in order to reliably reach one's destination.

Some form of pragmatic understanding of the function of science informs many contemporary writers of organizational research. For example, Weick (1989, p. 524) contends that "the contribution of social science does not lie in validated knowledge, but rather in the suggestion of relationships and connections that had not previously been suspected, relationships that change actions and perspectives." Powell (2001, p. 884) declares the same message more boldly: "To a pragmatist, the mandate of science is not to find truth or reality, the existence of which are perpetually in dispute, but to facilitate human problem-solving." Watson, in turn, inspired by pragmatist epistemology, argues that the 'truthfulness' of organizational research papers is fulfilled when they will enable the readers of these studies "to cope more effectively than they otherwise might should they become practically involved in the settings covered in the studies" (Watson, 2011, p. 207). In table 1, pragmatism as a methodology for organizational research is briefly compared to positivism, constructivism, and critical realism.

The role of abductive inference in scientific inquiry

Having found both deductive and inductive reasoning lacking, Charles S. Peirce proposed that we need a third form of reasoning to complement these two. This he called abductive reasoning, "the process of forming an explanatory hypothesis" (Peirce, 1903b, p. 216), which has sometimes been called *inference to the best explanation* (Josephson & Josephson, 1994, p. 5; Marcio, 2001, p. 103). In the classic formulation of abduction, a surprising fact is observed and this initiates a search for a hypothesis that would best explain the surprising fact (Peirce, 1903a, p. 231). Thus abductive inquiry starts from the indeterminate situation where surprise, wonder, doubt or similar feeling problematizes one's current way of explaining one's life-world (see Marcio, 2001 for a discussion about the relation between Dewey's theory of inquiry and Peirce's notion of abduction). This initiates a process where the inquirer uses imagination (see here

Alexander, 1993) to come up with a novel way of seeing matters that is consistent with the larger context of his or her other experiences and ways of seeing the world, as well as explaining the surprising fact. Abduction thus is a creative process, it is about the insight of “putting together what we had never before dreamed of putting together” (Peirce, 1903a, p. 227); making an imaginative “conceptual leap” (Klag & Langley, 2013) in order to form the most warranted explanation of the matter at hand. Abduction is therefore a learning process – and arguably the only form of inference that can explain how new knowledge comes into being (see Prawat, 1999).

In a scientific context and most generally stated, the aim of abductive inference is to arrive at the best available explanation taking all into account – one’s observations, one’s preunderstanding, and any other material available such as previous theoretical explanations about the phenomenon. ‘Best’ here thus doesn’t refer to any objectively best explanation, but to the best explanation from the point of view of the current standards of evaluation of the particular researcher or research community with regard to the values they see that science should advance. The way of reasoning found in classical detective stories such as Sherlock Holmes is often used as an example of abductive inference, because in them the detective demonstrates staggering creative capacity in putting together seemingly insignificant facts that become explainable only through the hypothesis generated by the ingenious protagonist (e.g. Paavola & Järvillehto, 2011; Shields, 2003). Medical diagnostics is another good example of abductive reasoning. The physicians observe certain symptoms, compare them with their previous knowledge, perhaps consult some books or colleagues, and take further tests to arrive at their diagnosis (see Alvesson & Sköldberg, 2009, p. 5). The result is thus neither a logical necessity of the premises nor a pure induction from the symptoms, and it might not always be accurate, but it nevertheless gathers together the best possible educated guess of the physician. In order to arrive at this understanding, “a constant movement back and forth between theory and empirical data is necessary” (Wodak, 2004, p. 200). The result of abductive reasoning is not the final truth about the matter – because of the fallibilism, such a thing is unobtainable – but a tentative hypothesis that nevertheless would best explain the evidence and has the most potential to provide practical results.

In organizational research, abductive reasoning has sometimes been labeled *inference to the best explanation* and according to Ketokivi and Mantere, reasoning within it is viewed as a “context-dependent process”

where the role of the researcher is active (Ketokivi & Mantere, 2010, pp. 323–324). The researcher makes a leap of imagination to put together the facts to arrive at a novel hypothesis that would best explain what is being explained. In this process the perceptions and the preunderstanding of the researcher are in constant interplay (Peirce, 1903a, p. 227; see also Dubois & Gadde, 2002). But the researchers are as much ‘cultured beings’ as the people they study (Watson, 2011, p. 212). In the pragmatist epistemology, there is no such thing as pure uncontaminated experience, “even so-called *pure* perception – i.e., perception understood as radically distinct in nature from intellectual or cognitive activity – is a species of abduction” (Marcio, 2001, p. 110), and thus the data the researcher draws upon is always already interpreted in one way or another. Experience “is full of inference” (Dewey, 1917, p. 48), what we take as “observed facts” are never final results of observation, but operational parts of it (Dewey, 1938, p. 113). To emphasize this interpreted nature of all data, I use the term “provisional data” when describing the operational “facts of the case” (Dewey, 1938, p. 184). Therefore, “how we *know* reality depends upon how we *experience* it, and our experience is in turn determined by our conceptual schemes” (Marcio, 2001, p. 110). In a way, abduction is thus about evolving the researcher’s way of perceiving – his perceptual schemes – to accommodate for novel experiences that disturbed these schemes by seemingly not fitting into them. Actual inquiry thus never starts from a neutral *tabula rasa* position, but it takes place through the actions of the inquirer that are shaped by his or her particular world view, *Weltanschauung*. The aim is to reach a situation in which the provisional data to be explained, the theories adopted, and one’s evolved world view form a “resolved unified situation” (Dewey, 1938, p. 111); in other words a wholeness in which one’s new way of seeing the matter is able to explain in a satisfactory way what before represented a mystery (cf. Alvesson & Kärreman, 2007).

Abduction thus presumes an openness to develop one’s world view: We make an interpretation based on our present understanding, but this novel interpretation simultaneously shapes and widens our world horizon, thus enhancing our capability for future interpretations. In the process of abduction “the researcher, as it were, eats into the empirical matter with the help of theoretical pre-conceptions, and also keeps developing and elaborating the theory” (Alvesson & Sköldberg, 2009, pp. 5–6). The abductive inference therefore means a continuous circular movement between one’s own preunderstanding, the provisional data one has gathered, and existing theories to reach an understanding of the phenomenon

under scrutiny that best serves the practical interests one has chosen to advance. This means that the research questions, the theories used, and the insight gained are all “crystallized in an iterative process” (Mantere, 2008, p. 299), the main elements of which are the indeterminate situation in question, the provisional data available related to the situation (which can include any material or experience the researcher is able to capture related to it), existing theories regarding it and the researcher’s own current conceptions and, more broadly, the researcher’s whole world horizon (see Figure 1). The researcher, equipped with his or her preunderstanding, encounters the phenomenon at hand by gathering provisional data about it and familiarizing him or herself with theories about it. When successful, the circular movement is essentially a spiral: At the beginning of the process the preunderstanding of the researcher and the provisional data stand apart from each other; a gap of wonder separates them. In the iterative process the aim is to get them closer to each other; to arrive at a harmonious picture where the provisional facts of the case make full sense, according to one’s acquired horizon of understanding and given one’s familiarity with and commitment to different theoretical perspectives.

Abductive, but not constructivist

For a pragmatist, the sense of unification acquired at the end of the abductive inference is not the end of the story. And here its difference with constructivism and research inspired by hermeneutics is most visible (see Table 1), as will be now shown in a further attempt to clarify the uniqueness of Deweyan instrumentalism.

Although it can be argued that all three forms of reasoning – deductive, inductive, and abductive – play some role in all types of research (Mantere & Ketokivi, 2013), some forms of reasoning are more centrally connected to certain research frameworks. While deductive reasoning is especially suitable for positivistic research, and inductive reasoning has been used in post-positivistic inductive case research (Mantere & Ketokivi, 2013), abductive reasoning with its emphasis on the active interpretive component of the researcher in theoretical inferences has been adopted mostly by researchers working within an interpretive framework (e.g. Alvesson & Kärreman, 2007; Wodak, 2004). Similarly, hermeneutics emphasizes the historical situatedness of our knowledge and the circular movement of understanding in which “we must understand the whole in terms of the detail and the detail in terms of the whole” (Gadamer, 1960, p. 291).

As with Dewey (see Marcio, 2001, p. 99), the criteria for correct understanding are holistic: “harmonizing all the particulars with the whole” (Gadamer, 1988, p. 68). In organizational research, “the aim of the hermeneutical researcher is not to arrive at an ‘original meaning’ of the text [data] but to seek to enter into a dialogue with it, seeking to ‘merge horizons’ between the interpreter and the text [data]” (Mantere, 2008, p. 299 brackets in the original).

For interpretive and hermeneutic researchers, this gained understanding or sense of ‘merged horizons’ is usually seen what the inquiry aims at. With a growing realization that scientific theories are but “subjective constructions built from a variety of symbolic constructs” (Tsoukas, 1993, p. 323) comes a willingness to challenge dominant interpretations and give voice to “practitioners’ lived experiences” (Tsoukas & Knudsen, 2003, p. 11). The “variety of alternative perspectives” is welcomed as a positive development (Astley, 1985, p. 497) and consensus is viewed as “an unjustified suppression of the pluralism of interpretations and forms of life” (Scherer, 2003, p. 325).

However, as compared to these interpretive and hermeneutic epistemologies, pragmatist epistemology gives us better tools at assessing what is a good interpretation and what is not (see Wicks & Freeman, 1998). Within constructivism different suggested perspectives are not justified by their relation to reality, but grounded merely in “intra-paradigmatic metaphorical lines of reasoning” (Tsoukas, 1993, p. 323). What is lost with this celebration of pluralism of perspectives is a way of assessing the value of these different perspectives.

Against this, pragmatism argues that some theories and explanations are better than others in guiding our behaviour within organizational reality. In other words, even though no theory can claim the status of objectivity, in practical terms some theories are better maps for navigating the world than others. The abductive inference gives us a potential map to use in engaging with the organizational reality, but its value is only seen when it is actually used as a map: Will it help organizational actors better achieve their aspirations and overcome their challenges? Later, when I discuss ends-in-view, I take issue with who these actors are, and whose interests’ organizational research should advance.

This emphasis on ends-in-view means that in pragmatism, abductive inference is not the whole story of scientific inquiry, but embedded within a larger whole (see figure 1). The abductive inquiry in pragmatism

is triggered by some actual concerns – the indeterminate situation –, and the warranted assertions reached through abductive inference are evaluated based on their capacity to bring these concerns into resolution given the ends-in-view. This is the essential difference between pragmatism and more interpretive epistemologies and hermeneutic models of scientific inquiry.

Critical, but without the realism

Pragmatism isn't the only 'third alternative' that has been suggested to mediate or overcome the conflict between positivism and constructivism. *Critical realism* has also been given this role by its supporters (e.g. Fairclough, 2005; Reed, 2005b). Furthermore, there are many similarities between critical realism and pragmatism: both acknowledge that science is in the end a social product (Bhaskar, 1998a, p. xii), yet want to maintain the possibility to compare and assess the merits of different scientific explanations. They also share an understanding of "the value-impregnated character of the social reality" (Bhaskar, 1998a, p. xviii). Therefore it becomes essential to differentiate between the two in order to show that pragmatism indeed is making a unique contribution and is not merely repeating the themes already raised by critical realism. This discussion serves the additional purpose of further clarifying how pragmatist stance differs from and stands outside the traditional ontological division between realism and anti-realism.

Critical realists subscribe to the basic notion of realism according to which there exists a mind-independent reality, which has its own inherent order (Tsang & Kwan, 1999, p. 761). However, unlike more 'dogmatic realists' (Kwan & Tsang, 2001), they are highly critical of the capacity of science to reach firm conclusions about this underlying reality. For example, they see that the target of scientific research is not empirical events or regularities in themselves, but rather the underlying structures and mechanisms that produce these empirical events (Reed, 2005b; Tsang & Kwan, 1999). Furthermore, they see that scientific theories can only offer provisional descriptions and explanations of phenomena that are always open to revision and reformulation. Nevertheless, even though our knowledge of reality is never infallible, commitment to realism offers a possibility to assess and evaluate competing scientific theories based on their explanatory power of the underlying structures and mechanisms (Reed, 2005b). Critical realists thus believe "in the possibility of progress towards a true account of phenomena", but don't take

such progress for granted (Kwan & Tsang, 2001, p. 1165). At the heart of critical realism is an attempt to reconcile ontological realism with epistemological relativism (Bhaskar, 1998a, p. xi).

Critical realism emerged both generally (see Bhaskar & Lawson, 1998) and within organizational research (see Reed, 2005b) as a reaction to constructivism and postmodernism. Critical realists felt that even though constructivists rightly criticized the too naïve realism of traditional positivism, it nevertheless erred in other direction by losing a way to get beyond appearances, discourses and interpretations. When everything is seen as discourse, we lose sight of the stratification, or “ontological depth” of nature and society (Bhaskar, 1998a, p. xvi), and lose the possibility of progress and real critique. Against these “inherent explanatory limitations” of constructivist and postmodern epistemologies (Reed, 2005b, p. 1629) critical realism brings the notion that there indeed are underlying structures and mechanisms that are not directly accessible. Instead of the ship of science drifting aimlessly in the wide ocean where ‘anything goes’, it is firmly – yet critically – anchored in the notion of realism, which provides “a rational criterion for theory choice” and thus safeguards the “idea of scientific development over time” (Bhaskar, 1998a, p. xi).

The main difference between critical realism and pragmatism is ontological. Despite its caveats, critical realism is still a form of ontological realism (see Bhaskar, 1998b), and pragmatism as represented here doesn’t subscribe to realism (see Hildebrand, 2003). Pragmatism, too, is wary of the too permissive nature of constructivism and postmodernism, and acknowledges the need to evaluate scientific theories against something. However, pragmatism sees it unnecessary and unfruitful to try to anchor the theories to some notion of there being a real world out there. Instead, the theories are anchored to “nature in its instrumental characters” (Dewey, 1929a, p. 111) and the ability to navigate in it. Continuing the anchoring metaphor, one could put it as follows: If our aim is to sail to America, it is irrelevant whether our anchor can hit the bottom or whether the ocean is bottomless. What is relevant is that some theories about winds, sailing and so forth are better at taking us closer to our target, while others might leave us shipwrecked. In this experiential sense some theories are better than others. Whether or not these theories correspond to some ‘reality’ is meaningless, unsolvable and irrelevant question from the point of view of pragmatist experientialism.

From this basic ontological difference between pragmatism and critical realism some other methodological differences emerge. While the overall aim of science in critical realism is still to “explain events and processes” (Danermark, Ekstrom, & Jakobsen, 2002, p. 74), pragmatism, as stated before, sees the role of science as one of serving human purposes. Science in pragmatism is accordingly not progressing towards theories that better correspond to some underlying reality, but rather into theories that allow human beings to have more control over the outcomes their lives take. This means that pragmatism can more easily accommodate the existence of multiple theories on the same phenomenon. In critical realism they are competing against each other (see Bhaskar, 1998a, p. xi) and the aim of science is to “determine what is true and false about the states of affairs” (Reed, 2005a, p. 1665), while in pragmatism one can look at different theories as complementing each other: some theories work better than others for certain purposes, other theories are more useful maps for some other purposes.

This brings us to the most contested postulate at the heart of critical realism (see especially Contu & Willmott, 2005): How can one maintain that science produces knowledge “of real things and processes” if one in the same sentence acknowledges that it “cannot provide an absolute and universal guarantor of anything” (Reed, 2005a, p. 1665)? The answer critical realism provides is a transcendental argument from the conditions of the possibility of experimentation in science (Bhaskar, 1998a, p. xii): Science is not possible if we do not postulate that there exists things independent of our knowledge of them (Bhaskar, 1998b, p. 18). Here we don’t have space to elaborate the merits and problems of this complicated argument, but even if we would take for granted the ontological realism suggested by Bhaskar and his followers, the question remains: What role could this reality play in any actual scientific account of the nature of the world and its underlying structures? If by definition we cannot know anything about the structures of the presupposed ‘real’ world save for scientific investigation (Bhaskar, 1998b, p. 22), then this real world cannot be used to evaluate the merits of different scientific theories – that would be circular argumentation. Thus whether or not a real world exists, we need some other criteria to evaluate the merits of different scientific theories. So it remains unclear what actual difference the ‘realism’ in critical realism makes for the possibility of scientific critique and progress. The challenge of accommodating “epistemological relativism” (Bhaskar, 1998a, p. xi) where knowledge is historically

transient with the ability to make foundational truth claims has been raised repeatedly by critics of critical realism (Al-Amoudi & Willmott, 2011; Contu & Willmott, 2005; Mir & Watson, 2001).

Be the answers to these critiques as they may, pragmatism seems to be able to bypass these problems with its experiential ontology, while retaining much of the qualities that makes critical realism attractive – foremost the possibility for experimentation and “substantive scientific critique” (Bhaskar, 1998b, p. 31). In pragmatism, successful scientific experiments and acquired scientific knowledge don’t show “why the real world is the way it is and how it works” (Reed, 2005a, p. 1666), but rather provide an established, if provisional, framework of intellectual resources and rules for navigating our way in the experiential world we are embedded in.

The pragmatist way of doing organizational research

Having discussed in length the ontology and epistemology behind Deweyan pragmatism and how it compares to constructivism, realism, critical realism, and realist interpretations of pragmatism, we next need to address the actual research practice. What difference does it make to one’s actual research practice that one commits oneself to the pragmatist philosophy of science? This is the question I address next. As will be evident, pragmatism doesn’t lead to strict and binding guidelines about the proper way of conducting research. Rather, true to its fallibilistic and evolving nature, pragmatism manifests itself mainly through certain underlying attitudes or virtues guiding the research practice. These virtues can be seen as research strategies that have proven in the past to lead the inquiry in the desired directions (cf. Paavola, 2004), but nevertheless are open to evolve in the future, if some reason to change them arrives (Dewey, 1938).

There are in essence three elements to the pragmatist approach for conducting research as presented here (see Figure 1): Firstly there is the connection to practice, doing research with ends-in-view. Secondly, there is the fallible abductive process of inference through which the researcher aims to gain insight into the question at hand. And thirdly, there is the collective dimension of inquiry, the way the researcher interacts with other members of the scientific community and in the end aims to convince them about the soundness of one’s insights. Below I discuss the consequences for research practice of these three elements, starting with ends-in-view.

Conducting inquiry with ends-in-view

The quintessential character that makes scientific inquiry pragmatist is that one remains constantly aware of the aims of the inquiry, the practical consequences that the inquiry is hoped to have. Dewey uses the term ‘ends-in-view’ to describe these “foreseen consequences which influence present deliberation” and emphasizes that they are not things lying outside of inquiry but something that arise and function within it (Dewey, 1930, p. 223). These ends thus make the inquiry proactive, they make it possible to “understand the actual in light of the possible” (Alexander, 1993, p. 371). This has few implications for the scientific practice.

Firstly, as already emphasized, the inquiry should not be mere exercise in intellectual trickery but it should be anchored in some genuine problem that human beings face: “Any problem of scientific inquiry that does not grow out of actual (or ‘practical’) social conditions is factitious; it is arbitrarily set by the inquirer” (Dewey, 1938, p. 499). In other words, there should always be something that the inquiry aims to improve. If the results of the inquiry are irrelevant to any genuine issue, they are just a form of “intellectual busy work” that is “scientifically ‘dead’” (Dewey, 1938, p. 499). If an inquiry seems to have no potential to improve anything in practice, a pragmatist sees no point in engaging in such inquiry.

The benefit of starting from a genuine problematic situation is that this provides for us something against which the success of the inquiry can be evaluated. Intellectual hair-splitting can go on forever if one has lost sight of the practical situation it is supposed to contribute to (see Kitcher, 2011, p. 251). Ends-in-view is what can “finally bring [inquiry] to rest” (Dewey, 1930, p. 223). Finding a satisfactory way to transform the problematic situation into a more unified whole where one feels warranted to act based on the new insights is what the inquiry aims at, and when this is accomplished, the inquiry is successful.

This means that scientific inquiry is not neutral, but value-laden from the beginning: “The problematic situation has a deeply normative character”, because it is primarily an action situation where “something must be done and there are better and worse things we can do” (Hogan, 2009, p. 286). Scientific research is not detached observation, but guided by values from the moment the researchers choose the problematic situation they want to address. Therefore, researchers need “to engage in discussion about

which purposes are advanced and why” (Wicks & Freeman, 1998, p. 129), and this puts an end to the illusion of a value-free science.

Just as the scientific inquiry starts from practice, it is in practice where it should end. However, it should be clarified that although final test of inquiry in pragmatism is always practical, this doesn’t mean that scientific research is obliged to provide directly demonstrated practical consequences in order to be accepted. Ideally, the consequences should be shown through “active and deliberate interventions that are controlled” (Brown, 2012, p. 295), but especially in social inquiry this is not always possible in any straightforward sense. As Mills states, if the genuine problem one is working with is “readily amenable to statistical procedures, one should always try to use them”, but most of the problems that matter are not simple enough for this to be possible, and the task of the social scientist is to address them with the best ways available (Mills, 1967, pp. 73, 120). Therefore “testing the hypothesis by overt or imaginative action” are both possible ways to bring an inquiry to its end (Dewey, 1933, p. 107). In the latter case one is not directly experimenting to find out the consequences of one’s proposed solutions, but rather keeps the practical aims in mind and tries to argue why one is warranted to assert that the solution proposed should provide practical results that are beneficial for the situation in question. In other words, the new insights produced by the inquiry widens our imagination of possibilities, opening up our “future as a horizon of possible actions” that can guide our present actions (Alexander, 1993, p. 371). Nevertheless, even in this case the value of the insight is anchored in its *potential impact* for practice rather than with its correspondence with a real world or some other realistic notion.

Another way to illustrate how pragmatist research is connected to practice is to see common sense inquiry (Dewey, 1938, pp. 67–68) as a form of *single loop inquiry*, where the aims and methods are mainly taken as given and the task is merely to reach the goal by determining the particularities of the situation at hand (cf. Bradbury & Reason, 2003, p. 159; Argyris, 1977). *Double loop inquiry*, as practiced for example by pragmatic action research (Greenwood & Levin, 2007) or particularly reflective practitioners, starts from the particular situation, but opens up its constituents – the aims, convictions, and methods – to further scrutiny before reaching towards a unified situation which resolves the original problematic situation. Finally, *third loop inquiry* is even further removed from the particular situation by aiming to establish through inquiry more generally valid warranted conclusions that are “freed from direct reference to the

concerns of a limited group” (Dewey, 1938, p. 115). As rigorously warranted assertions, they are then available to be used by practitioners more close to the particular situations. Pragmatic research might thus be more or less removed from the actual indeterminate situations of everyday life, but even in its most theoretical instances it ultimately refers back to the actual existential situations that it aims to improve.

It is worth emphasizing that along with every other element of the inquiry, also the guiding values of research evolve during the process. It is not the case that the ends are chosen before the inquiry and then the actual inquiry progresses guided by them. Instead, the validity of them as ends worth striving for remains an open question throughout the inquiry and in fact the inquiry should be seen as a way to re-evaluate the value of the chosen ends. As Dewey states: “ends in their capacity of values can be validly determined only on the basis of the tensions, obstructions and positive potentialities that are found, by controlled observation, to exist in the actual situation.” (Dewey, 1938, p. 503). We thus become aware of our guiding values only in and through the inquiry itself. This means that reasoning about the guiding values inherent in the very process of inquiry should be an important part of any scientific inquiry.

Researcher should strive to become aware of the values that guide their inquiry, and be ready to reconsider them in the light of the developing nature of inquiry. The inquiry might start with certain aims and values as guiding its direction, but at the end of the inquiry we might find out that these have been completely transformed through the new insights gained in the process of inquiry.

The ends-in-view of pragmatist research

Lately, an increasing number of voices within organizational research have pointed out how writing organizational research is an ethical practice (e.g. Rhodes, 2009). As noted by Tsoukas and Knudsen (2003, p. 15), organizational phenomena “do not rest upon invariable social laws, but upon the stability of the beliefs and expectations of the actors involved.” Because research influences those beliefs, writing organizational research “is always already an ethical practice in that it entails an active rendering of reality, rather than a passive reporting of it” (Rhodes, 2009, p. 654). Simpson (2009, p. 1333) reminds us that “we are all active participants (practitioners) in our social worlds. It is through our participation that we continuously construct and re-construct the social meanings that shape our thoughts and actions.”

Because researchers are considered to possess expertise as regards understanding of organizational

phenomena, their opinions carry extra weight in this construction process, and thus they have great potential to influence and change people's convictions about organizational reality. Therefore, as Mills (1967, p. 79) states, "whether he wants it or not, or whether he is aware of it or not, anyone who spends his life studying society and publishing the results *is* acting morally and usually politically as well." From this, a heavy responsibility follows to reflect on the potential beneficiaries of the conceptions and theories created and to be explicit about the values advanced.

What are then the ends and values that should guide scientific research? In here, pragmatism offers two possible interpretations. One possibility is to embrace pluralism as comes to potential ends. The ends emerge from the chosen problematic situation, but different problematic situations give rise to different ends to aim at and different values to be upheld. This means that different researchers might be striving towards different ends. For example, two organizational researchers might investigate the same organization but interact with different people therein (this example draws from Watson, 2010): First one adopts the perspective of top management and accordingly comes to frame the problematic situation as that of trying to find which employment management practices lead to best business performance. The ensuing investigation is shaped accordingly, and the result of the inquiry is some way to evaluate the 'performance' of different management practices. However, the second researcher might look at the situation from the perspective of the employees at the bottom of the corporate hierarchy, and instead see that what needs to be done is – in the spirit of Mills (1967) – to increase the capacity of the employees to link their individual problems (e.g. uncertainty of job) with larger societal developments (e.g. shift of manufacturing out of industrialized nations). Thus, researchers of the first kind act in effect as "'best-practice' advisors' and legitimacy-givers to corporate interests" (Watson, 2010, p. 915), while the latter kind of researchers come to act out of 'critical' and 'emancipatory' interests.

In the pluralist interpretation of pragmatism this diversity of ends is not seen as a problem. Different researchers might indeed be pursuing different interests. Instead of judging one set of values as 'wrong' and other as 'right', the remedy for the situation is to be explicit about the values pursued. In reporting one's research, one should also report the values and interests that led one to choose one's problematic situation in the first place. One should also report how the ends chosen developed during the inquiry, and what are the potential benefits and who the potential beneficiaries of the research conducted. Instead of

advancing certain interests out of habit or because other researchers within the discourse tend to do it, one should explicitly consider and report them. The researcher ought to be “morally autonomous”, having genuinely chosen the values one pursues through research (Mills, 1967, p. 178). This comes close to what Hugh Willmott has called “informed pluralism” where, instead of “epistemological correctedness”, greater weight should be given to assessment of practical effects, while acknowledging that “approaches may be in opposition rather than complementary, to each other” (Willmott, 2008, p. 82).

The other interpretation of pragmatism would also emphasize this explicit reflective work regarding one’s guiding values. But instead of settling with a pluralism of values, here one sees that we should strive towards unification also in terms of values. Just as science as collective inquiry aims towards providing people with an adequate understanding of the physical and social reality they live within, this form of inquiry should aim to find the values that unite people. For Dewey democracy is a form of cooperative experiment where we together aim to find the ways to live together in which everyone “has the right to equal opportunity with every other person for development of whatever gifts he has” (Dewey, 1939, p. 342). Just as we search for ways of seeing the world that best guide us in our aspirations, we should also search for the values that best ensure our ability to live together in a way where everyone can prosper and flourish. Here again we see how pragmatism starts from the practical situation and ‘repairs the boat while sailing’: At the same time as our current inquiries are guided by our current values, we also aim to improve these values – improvement meaning here finding a set of values that best ensures the attainment of these values given that we live together in societies and thus individual fates are intertwined with the functioning of the society. This connection between the idea of science and the idea of democracy in pragmatism was strongly present in Dewey, and has been recognized by many interpreters of pragmatism (e.g. Joas, 1993; Mills, 1967). Accordingly, Watson states that “the main ethical drive of pragmatism is to equip the members of democratic society in general with knowledge about the realities of their situations and prospects” (Watson, 2010, p. 925).

Whether one subscribes to the pluralist or unificatory notion of the values advanced, pragmatist researchers of all stripes highlight the importance of connecting the scientific inquiry to experiential situations and practical aims. This may be seen as the most important practical outcome of pragmatist

understanding of scientific inquiry. Also researchers of other methodological commitments have often voiced concerns about the practical relevance of scientific research (e.g. Hambrick, 1994; Pearce, 2004), but only pragmatism is able to provide a methodology of inquiry where this practical relevance is inbuilt in the very heart of the inquiry, rather than being a fortunate, yet separate outcome of inquiry.

Conducting inquiry with a fallibilistic attitude

For Dewey, all facts and methods used in inquiry ought to be taken as provisional and functional, never as fixed and given (Dewey, 1938, p. 112). In utilizing previously generated warranted assertions we have to remain aware that they were generated for a specific indeterminate situation based on certain values and assumptions within which they were successful but which doesn't guarantee their functionality in other contexts. Therefore the "productive use of doubt" becomes an essential part of "the scientific attitude" (Dewey, 1929b, p. 228), which we could call the *attitude of holding theories lightly* (the term is borrowed from Orange, 1995). There is namely a paradox in the pragmatist epistemology as a mode for inquiry. On the one hand, we need our current preunderstanding – our concepts, warranted assertions and theories – to make any sense of our research topic in the first place. They are the "habits of interpretation and action ready for use, and in use, in our transactions with the world" (Locke et al., 2008, p. 908). On the other hand, the whole point of abductive inquiry is to transcend our current preunderstanding, to expand it so that it can accommodate novel experiences. Metaphorically speaking, we must fix and transform the ship while we are sailing on it. To succeed in this, and to avoid mistakes deriving from unnecessary "fixation" (Dewey, 1938, p. 40), we must '*unstiffen*' (James, 1907a, p. 26) our conceptions and theories; they should not 'block the path of inquiry' by blindfolding us from encountering surprising facts and novel events. It becomes our task to find a balance between committing ourselves to certain ways of seeing the world, while at the same time upholding a certain distance to these commitments, and this is not easy to achieve. As Peirce noted, "the pragmatist knows that doubt is an art which has to be acquired with difficulty" (CP 6.498). We must learn to "hold our theories lightly, in a fallibilistic spirit, ready to be surprised and prepared to admit our theoretical [- -] mistakes" (Orange, 1995, p. 52).

Within organizational research, Miles & Huberman (1994, p. 11) communicate this attitude in advising how “the competent researcher holds [-] conclusions lightly, maintaining openness and skepticism”, while acknowledging that “the conclusions are still there, inchoate and vague at first, then increasingly explicit and grounded.” Similarly, Locke, Golden-Biddle and Feldman (2008) – inspired by Peirce’s notion of abduction – have advanced this kind of attitude in proposing that we should *make doubt generative*. They argue that “living doubt is necessary to energize inquiry” (Locke et al., 2008, p. 908) and look for ways to engage, cultivate and use it in the research process. Instead of fearing doubt and uncertainty, we should embrace the moments and feelings of not knowing something. “Abduction is not just something that we do; it is a consequential process” (Locke et al., 2008, p. 913) and often needs doubt and surprise of not knowing to start off. Therefore, in order for anything novel to initiate, we need to “disrupt the order”, to fight against the impulse of thinking that we already know (Locke et al., 2008, p. 915). Our minds are “powerful rationalizers” that easily jam any unusual fact into an existing category or explain it away with an existing theory before any real sense of doubt and wonder has the time to develop (Abbott, 2004, pp. 244–245; quoted from Locke et al., 2008, p. 915). To make “conceptual leaps” possible (Klag & Langley, 2013), we need strategies such as deliberately introducing diversity and contradicting metatheories to one’s interpretation process to get rid of the assurance of already knowing and to give room for novel ways of seeing. Additionally, embracing doubt means nurturing hunches, because these felt senses of ‘what may be’ are what can guide researchers to “feel their way through doubt toward knowing something new” (Locke et al., 2008, p. 913).

However, although fallibilistic doubt is central to pragmatist inquiry, we should be wary of over-emphasizing doubt. Pragmatist inquiry is done with ends-in-view, and we should keep those ends in view also when rationing doubt. Dewey warns against the “mania of doubting” (Dewey, 1938, p. 106), reminding that doubt must be genuine and serve the inquiry in the journey towards a satisfactory resolution. Although everything can in principle be doubted, one must make choices about which warranted assertions to doubt in the present inquiry and which to use as the basis of inquiry. Pragmatist inquiry is thus about the strategic usage of doubt in a way that serves the inquiry in reaching satisfactory warranted assertions to the problematic situation in question.

Conducting inquiry collectively

Finally, scientific inquiry in pragmatism is collective; it is “socially conditioned” (Dewey, 1938, p. 19) and cooperatively executed. In order to conduct a scientific inquiry, one needs to adhere to the institutionalized ways of engaging with the research community: one needs to demonstrate to them how the problem at hand is worth studying in the first place, one needs to provide the arguments that warrant the steps of reasoning one takes in one’s research process, and one needs to demonstrate to the research community how the proposed solution has the potential to improve the situation in question. In all stages of inquiry, one is thus communicating with the research community and using the feedback provided to further shape and improve one’s ongoing inquiry. Naturally, this acknowledgement of the collective nature of scientific inquiry is not something that is uniquely pragmatist. In a sense, this makes pragmatist inquiry scientific, but it doesn’t alone make scientific inquiry pragmatist. For the latter, the attitude of fallibilism and keeping ends-in-view discussed above are essential.

As regards this collective dimension of inquiry, the specifically pragmatist theme is the special emphasis placed on being explicit about the aims and values inherent in the inquiry. Along with other non-positivistic research approaches that have come to appreciate the active role of the researcher and the historical nature of the research practice, pragmatism sees that researchers should aim towards making explicit the choices made during the inquiry. As Watson argues, the fact that the researcher is a ‘cultured being’ “necessitates the researcher writing *reflexively* so that the readership, or social scientific community (to speak more formally), can situate or ‘appreciate in context’ the content” of the study (Watson, 2011, p. 212). Recognizing that one’s choices are based on one’s values and conceptions, and attempting to be explicit about them is a much better option when compared to letting these enter into the research process in disguise and without clear acknowledgement. Reporting explicitly the values in use and guiding principles of the research inquiry – and not a “pretense of factuality” (Rhodes, 2009, p. 654) – become the guiding principles of pragmatist research as already elaborated above in the discussion of ends-in-view.

Conclusion

This article has argued that the philosophical tradition of pragmatism, especially the Deweyan strand within it, could provide a viable ontology, epistemology and philosophy of science for organizational research. The ontological experimentalism and epistemological fallibilistic instrumentalism provide together a way to go beyond the current debates between realism and anti-realism. Instead of a choice between starting either from the ‘real world’ or from ‘discourses’, pragmatism sees that inquiry starts from, and is always embedded within, our ongoing daily experiencing. Scientific inquiry, as well as any other inquiry, should accordingly start from the problematic situations we face in our lives, and this already gives it an inescapably normative character: Scientific contributions are ultimately judged by their capacity to settle the problems we face as human beings, their capacity to widen our understanding of what is possible, and their capacity to guide us towards our aspirations.

At the same time science sets itself apart from other forms of inquiry through its time-tested standards of procedure that aim to ensure the precision, control, and systematicity of the warranted assertions generated (Brown, 2012, p. 263). There is a division of labor between different forms of inquiry and science as a whole makes itself useful for the society precisely because it allows researchers to remove themselves from the struggles of day-to-day existence and instead attempt to find more general insights that in the best case “enormously refine[-], expand[-] and liberate[-] the contents and the agencies at the disposal of common sense” (Dewey, 1938, p. 66). No method is perfect, but in the same way as some methods of surgery, farming, or road-making are better than others in accomplishing reliable results, some methods of inquiry have proven to lead more efficiently and economically to warranted conclusions. These are the methods “which experience up to the present time shows to be the best methods available for achieving certain results” (Dewey, 1938, p. 104), and thus we should rely on them at the same time as we look for ways to further improve these methods in use. Science thus represents a noble attempt to generate together as general and warranted conclusions as is possible for fallible mortal beings entrapped to live in current historical situations.

Instead of disengaged observers of the world, in pragmatism scientific community is seen as a guild of map-makers that together aim to find out the guidelines and common practices that best enable them to

craft maps that serve the general public. The art of scientific inquiry is ever-evolving but its fundamental aim in pragmatism is always the same: In the best case the inquiry ends “in conclusions which, when they are referred back to ordinary life-experiences and their predicaments, render them more significant, more luminous to us, and make our dealings with them more fruitful” (Dewey, 1929a, pp. 9–10).

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Figure 1 Three elements of pragmatic scientific inquiry: organic proto-inquiry, inquiry with scientific attitude, and collective scientific inquiry

	Positivism	Critical realism	Constructivism	Pragmatism
Ontology	Realism	Realism	Constructivism	Experientialism
Epistemology	Correspondence	Interpretive relativism	Interpretive relativism	Fallibilistic instrumentalism
Aim	True and accurate theories	As accurate theories as possible	Understanding different perspectives	Warranted guidance
Role of the researcher	Detached observer	Active interpreter	Active interpreter	Active interpreter
Standards for comparison	Correspondence with reality	Power to reveal underlying structures	No generally accepted standards	Capability for warranted guidance
Methods of science	Acontextual	Historically contextual	Historically contextual	Historically contextual

Table 1 A comparison of the four methodological frameworks. Builds on similar tables in Hatch & Cunliffe, 2006, and Lincoln & Guba, 2005). It goes without saying that this kind of table is by necessity a crude simplification of the positions depicted, for example rendering invisible their internal tensions and variations.