

EMBODIED, ENACTED AND EXPERIENCED DECISION-MAKING

1. Introduction

83

The considerations that guide this paper mainly come from the realization of how limited our understanding of decision-making actually is. We have little knowledge about how common people make decisions in their everyday lives. We have almost no insight into how the process of decision-making looks and unfolds from the experiential perspective of decision-makers – how they understand (and create) uncertainties, outcomes, consequences, etc. We do not even know whether people interpret situations that are perceived as decision situations from a third-person perspective as decision situations in the first place. Having to rely mostly on behavioral and neural data gathered in very specific and restricted decision situations forces us to postulate abstract theories and models about what is going on in the minds of decision-makers, when in fact we have little assurance that they correspond to how people go about deciding (in the lab, or in everyday life). All in all, we have little understanding of what sense and meaning decision-making has for decision-makers, and thus have a very limited understanding of the phenomenon at best.

The goals of this paper are to show that mainstream approaches to studying decision-making – accepting assumptions of traditional cognitive science and

research practices – provide a very limited account of decision-making, and to outline a better starting point for understanding and researching decision-making.

With these goals in mind I will, in the first part of the paper, elucidate some common views, claims, and presuppositions of traditional cognitive science that are still prevalent in most contemporary accounts of cognition. In the second part, I will show how they pertain to, and define, mainstream understanding and research on decision-making, and point to several problematic issues in the field. Among them are, for example: conceptualizing the process of decision-making as a kind of representational, disembodied activity; objectification of the phenomenon; disregard for the subjective and experiential perspective; lack of persuasive accounts of how people make sense of decision situations, etc. Finally, in the last part, I will propose that enactivism, with its critique of representationalism and naive realism, together with (neuro)phenomenology, which argues that experience should be studied rigorously, represent a more suitable starting point for understanding, researching, and explaining decision-making.

84

It should be said that cognitive science, enactivism, and phenomenology are immensely rich, diverse, and complex scholarly endeavors which I will not be able to cover in whole. My take on the problem and the limited scope will force me to focus only on certain aspects of cognitive science, enactivism, and (neuro)phenomenology. Further, I will not try to provide a comprehensive overview of decision-making, but will rather focus primarily on the generally accepted understanding of decision-making, common research practices, and some examples.

Furthermore, I should emphasize that I view decision-making as an activity that is at least partly a conscious activity: that is, an activity of which decision-makers are at least partly aware (from fleeting, fringe feelings pertaining to the activity, to full-blown deliberations about the decision at hand). In this, a fully unconscious process/activity does not count as decision-making in my

view¹. Lastly, my goal is not to provide a comprehensive definition of decision-making. Rather, I will try to show that decision-making should primarily be seen as an activity of sense-making – an activity that cannot be separated from the perspective of decision-makers.

2. In search of the mind: from behaviorism to enactivism

2.1 The black box of cognitive science and the elusive experience

Cognitive science in large part emerged as a response to, and a critique of, behaviorism, which denied the use of mental vocabulary and the validity of interpreting behavioral data in terms of consciousness in explaining and predicting behavior. With the goal of providing a better explanation and prediction of behavior, the newly emerging accounts of cognition claimed that processes and mechanisms between stimulus and response are in need of exploration and explanation. The behaviorist black box was opened, researched and explained. In that, cognitive science represents a rather radical departure from behaviorism. However, it retains its goal of be(com)ing an objective science: it mostly tries to research and understand cognitive functions and mechanisms as entities independent of the researcher and free of subjects' observations and points of view.

85

Nisbett and Wilson's critique of the use of introspective methods in psychology is one of the most well-known examples of such a distrustful attitude towards introspection. In the abstract, for instance, the authors claim that "there may be little or no direct introspective access to higher order cognitive processes" (Nisbett and Wilson 1977: 231). Similarly, many of those working in contemporary cognitive science hold the belief that reliance on subjective data and introspective methods should be avoided, or at least minimized, as much as possible and substituted for "objective" measures of various aspects of the mind, even, for example, awareness (e.g. Persaud, McLeod, and Cowey 2007).

¹ Such a position, of course, leads to further problematic questions, such as: "Lower-level" organisms thus do not make any decisions? What are the criteria for ascribing consciousness/awareness to organisms? Et cetera. These intriguing considerations unfortunately exceed the scope of the paper.

It should be noted that Nisbett and Wilson's (1977) critique of introspective methods is, to a certain degree, valid but does not hold as a general critique of "introspection". What Nisbett and Wilson are actually and unknowingly criticizing is the "naive" introspection² that can lead subjects to report on their beliefs, opinions, and implicit theories of *what* is going on in their minds, but not to report on the *how*, the lived, pre-reflective experience. Nisbett and Wilson's (1977) conclusion that we have no introspective access to "higher-order" cognitive processes is thus mistaken (Petitmengin et al. 2013).

86

Cognitive science, with its numerous models of what transpires between input and output, tried, and to a certain degree succeeded, to remedy the behaviorist "explanatory gap" between input and output. However, when it started filling the black box with abstract claims about mentality and consciousness, it opened a new kind of gap – it "created" the epistemological and methodological explanatory gap between the psychological and the physical (Levine 1983), the experiential and the material, the subjective and the objective. Furthermore, in its search for the "objective" mind, it overlooked its essential aspect, namely, lived, conscious experience. Roy et al. (1999) nicely express the point that (traditional) cognitive science "is a theory of the mind without being a theory of consciousness. It is a theory of what goes on in our minds when they are cognizing without being a theory of what is it like to be a cognizing mind" (Roy et al. 1999: 7). Cognitive science as a purportedly objective, third-person science of the mind did not, and cannot, close the explanatory gap that plagues it, if it is to continue to embrace an objectivist "view from nowhere". In this regard, cognitive science mostly does not differ much from behaviorism, which it tried so hard to denounce.

For, how could a cognitive scientist, relying on brain dynamics or behavioral data, state anything meaningful about a certain cognitive phenomenon, in a way that would be relevant to explaining and understanding a cognitive phenomenon, if not by firstly knowing and understanding what

2 According to many, the naive introspective observations originate from our natural attitude towards the world and experience, which should be suspended or "bracketed" (*epoché*) in our inquiry of consciousness and researched from a first-person perspective in its own right (see Gallagher and Zahavi 2012; Husserl 1982; Kordeš 2016; Varela et al. 1993; Varela 1996).

the phenomenon is or means? (This pertains to designing experiments as well.) The fact is that our “objective” cognitive scientist could not have come to such understanding by solely using “objective” measures of the mind. Rather, understanding what one wants to measure, interpreting the gathered data, and having an idea about how to use such results in explaining the mind (or a cognitive phenomenon) comes from one’s (cultural) beliefs, from the paradigm accepted by the community of scientists (Kuhn 1962), and, most essentially, from observing and understanding one’s own experience. For, how could one have a notion of what an emotion or decision is if not partly and necessarily by experiencing emotions and decisions?

Consequently, purportedly objective research is always, directly or indirectly, subjective. According to Gallagher and Zahavi (2012), this is why Merleau-Ponty

“criticizes the one-sided focus of science on what is available from a third-person perspective for being both naive and dishonest, since the scientific practice constantly presupposes the scientist’s first-personal and pre-scientific experience of the world [Merleau-Ponty 1962: ix]. This is also why the usual opposition of first-person versus third-person accounts in the context of the study of consciousness is misleading. It makes us forget that so-called third-person objective accounts are accomplished and generated by a community of conscious subjects. There is no pure third-person perspective, just as there is no view from nowhere. (Gallagher and Zahavi 2012: 20–21)”

In light of these considerations, cognitive scientists should start researching experience and their own “first-personal and pre-scientific experience of the world” in a systematic and rigorous way – the need for which, as I will show later, is rather obvious in decision-making sciences – if they are to understand the mind. This is not a simple matter, but one that is absolutely crucial.

2.2 From “naive” realism³ to enaction

Another major claim of traditional and the majority of contemporary accounts of cognition is that cognition is formal manipulation (or calculation) of internal mental representations of a pregiven world that leads to behavior. The main idea of the representationalist view of the mind is that the agent is a sort of problem- or task-solving “functional machine” that takes in something objective and “agent-independent”, internally represents it, manipulates what is represented, and, as an output, produces more or less appropriate behavior.

In their enactivist program, Varela, Thompson, and Rosch (1993) differentiate between two types of representation. First there is an uncontroversial sense of representation as being *about* something, as a “simple” fact of the intentionality of consciousness. Then, there is a much stronger sense of representation (representationalism), which, according to Varela et al. (1993), is burdened by false ontological and epistemological assumptions: “We assume that the world is pregiven, that its features can be specified prior to any cognitive activity. Then to explain the relation between this cognitive activity and a pregiven world, we hypothesize the existence of mental representations inside the cognitive system” (ibid.: 134–35).

88

In contrast to such representationalist and realist accounts of cognition, enactivism claims that the separation of the world and the subject (with its lived body and mentality) is a false dichotomy. The enactivism of Varela et al. (1993), which incorporates many ideas of phenomenology (especially of Merleau-Ponty), conceptualizes cognition as something that is neither there in the outer world nor in the subject, but rather in the relations between the world and (the actions of) the agent with a lived (experienced) body. The subject and the world, the “inner” and the “outer”, are intrinsically interdependent and mutually defining – dancing in a mutual, circular specification and negotiation of meaning that does not allow for any such strict separations. As Merleau-Ponty (1962) succinctly points out towards the end of *Phenomenology of*

3 With “naive realism” I have roughly “metaphysical realism” in mind – the thesis “that the objects, properties and relations the world contains exist independently of our thoughts about them or our perceptions of them” (Khleutzos 2016).

Perception: “The world is inseparable from the subject, but from a subject which is nothing but a project of the world, and the subject is inseparable from the world, but from a world which the subject itself projects” (Merleau-Ponty 1962: 430, quoted from Varela et al. 1993: 4).

The similarity between enactivist and phenomenological conception of the “relationality of cognition” can, for instance also, be seen in the phenomenological notion of intentionality:

“Intentionality is always a relation to that which transcends the present state of the system (where what transcends the system does not have to exist in the sense of being a real entity). In saying that the mind is intentional, phenomenologists imply that the mind is relational. ‘Being-in-the-world’ (Heidegger) and the ‘lived body-environment’ (Merleau-Ponty) are different ways of articulating this kind of relation. (Thompson and Stapleton 2009: 26)”

Cognition, as conceived from the enactivist point of view, is thus radically different from how traditional also embodied cognitive science sees it.

It must be noted that most contemporary accounts of embodied decision-making (e.g. Filimon et al. 2013; Lepora and Pezzulo 2015; de Oliveira et al. 2009; Oullier and Basso 2010), for instance speak of sensory-motor representations, retain the presupposition of naive realism, speak of the influence of the body on higher-order cognition, but not of the body as constitutive of cognition (at least of the body as a physical and experiential structure), etc. With this in mind, the mentioned approaches should not be equated with the enactivist view of cognition as embodied action (*enaction*; see Vörös, Froese, and Riegler 2016).

Moreover, enactivism takes the question of how agents “negotiate” sense and meaning through their embodied actions as essential and, consequently, aims at understanding the subjective, experiential point of view, which is, for instance, reflected in its incorporation of Merleau-Ponty’s double sense of embodiment into its theory (the body as both experiential and physical structure). As such, enactivism, together with some ideas of phenomenology, is a much more sensible starting point for understanding and researching decision-making, since decision-making, decision situations, and decisions, in my opinion, cannot

be understood without seriously considering what sense and meaning they have for and in the experiential perspective of decision-makers.

I will now underline some of the shortcomings of the mainstream (disembodied and embodied) accounts of decision-making, which – originating from the traditional understanding of the mind and its presuppositions – are rather clueless of what sense decision-making has for and in the perspective/horizon of the decision-maker.

3. Mainstream accounts of decision-making: from naive conceptions to limited research practices

3.1 Understanding and research of “disembodied” decision-making

90

Usually, decision-making is described as the process of choosing between alternatives or possible courses of action – an unassuming definition, which in itself does not seem to carry any strong methodological, epistemological, or ontological commitments. But how are “alternatives” and “choosing” actually conceptualized in classic and mainstream accounts of decision-making? And how is this process researched?

Let us first look at Hastie’s (2001) rather commonly accepted understanding of decision-making. He defines decisions as situation-behavior combinations that can be described with three defining components: “(a) courses of action (choice options and alternatives); (b) beliefs about objective states, processes, and events in the world (including outcome states and means to achieve them); and (c) desires, values, or utilities that describe the consequences associated with the outcomes of each action-event combination” (Hastie 2001: 656). He then defines outcomes as “the publicly describable situations that occur at the end of each path in the decision tree” and consequences as “subjective evaluative reactions (measurable on a good-bad, gain-loss scale) associated with each outcome” (ibid.: 657). The uncertainty with which decision-makers are faced when making decisions, in his view, “refers to the decision-maker’s judgments of the propensity for each of the conditioning events to occur. Uncertainty is described with several, sometimes competing, measures in various decision theories, including probabilities, confidences, and likelihoods” (ibid.), while judgment “refers to the components of

the larger decision-making process that are concerned with assessing, estimating, and inferring what events will occur and what the decision-maker's evaluative reactions to those outcomes will be" (ibid.).

Looking into Hastie's definition of decision-making, one quickly realizes that it is well-entrenched in the described assumptions of classical cognitive science. First, the existence of (at least two) alternatives is seen as a necessary starting point for decision-making (as is clear from experimental tasks used in research on decision-making that I will present shortly, alternatives are pregiven and as such seen as entities that exist independently of decision-makers). Second, the agent is presupposed to have (fixed?) beliefs, which are primarily about objective states, processes, and events (including potential outcomes) situated in the outside world. In this regard, probable outcomes are viewed as separate from the subject. Third, outcomes conveniently anchor and "define" subjective consequences, conceived as "evaluative reactions" to objective outcomes. The conception of subjective consequences as reactions, responses to external stimuli (outcomes) is in accordance with the classical "stimulus-calculation-response (behavior)" conception of the mind. Fourth, although subjectivity must be admitted into the picture of decision-making, it is by and large neatly packed into objective measures (such as good-bad, gain-loss scales), derived from "objective" measures, or it is simply ignored. Fifth, regardless of the fact that subjective consequences are seen as part of uncertainties, decision-making research is mainly concerned with uncertainties that lie in the objective world, being judged in the way of assessing, estimating, and inferring probabilities, confidences, and likelihoods. Finally, decision-making is often viewed (or modelled) as a sort of calculation with probabilities or likelihoods. This is a perspective on decision-making that plainly reflects the views of classical cognitive science – namely, that of naive realism, representationalism, and the "objectification" of the mind. The limitations of such understanding and entailed research practices are easily uncovered in experimental tasks, used by mainstream research on decision-making. Let me provide some examples.

The first example is a task used widely in neuroscientific research on perceptual decision-making. In the two variations of the task, the subject (animal or person) must repeatedly decide whether the net motion of a noisy field of dots moves in one or the other direction (or whether the presented

noisy image is a face or a house), indicating this by moving the eyes or pressing a button (see Heekeren, Marrett, and Ungerleider 2008).

The next is the Iowa gambling task – a gambling decision task under risk and uncertainty, first used by Bechara et al. (1997). The subject is faced with four decks of cards and given a virtual loan of 2000 dollars. She is told to try and draw cards in such a way as to lose the least amount of money and win the most. Without knowing which decks bring gains and which bring losses, subjects make a hundred consequent draws from any of the four decks, while researchers record the draws. Bechara et al. (1997) also measured the skin conductance responses of participants as a correlate of unconscious “emotional biases”.

The last decision task is an example of research on consumer decision-making that is also widely studied in psychology, behavioral economics, and neuroeconomics. In one of the experiments conducted by Dijksterhuis et al. (2006), participants were presented with the task of choosing the best of four cars. First, they read the descriptions of four cars, which were characterized by four attributes in one condition (“simple” choice) and by twelve attributes in the other (“complex choice”). Then, one group of participants was instructed to think about the cars for four minutes before they chose their favorite car (“the conscious thought” condition), the other distracted for four minutes by having to solve anagrams (the “unconscious thought” condition). Researchers also “measured” (on a scale) participants’ postchoice satisfaction. The best car was defined in terms of the most positive attributes (the positivity/negativity of attributes was predefined by researchers).

92

I do not want to claim that such studies do not tell us anything useful about decision-making. The tasks described by Heekeren et al. (2008) tell us something about low-level mechanisms of perceptual discrimination that play a role in decision-making, if we consider such activity as decision-making in the first place. Studies about judgment and decision biases (see the seminal work of Tversky and Kahneman 1974; Kahneman and Tversky 1979) tell us that people’s decisions are influenced by many different factors (which sometimes, in specific contexts, lead to biases). Studies about the role of emotions in mediating decision-making and decision biases (Bechara et al. 1997; De Martino et al. 2006) tell us that emotions play an important role in decision-making. The study of Dijksterhuis et al. (2006) points to a

rather intuitive conclusion that decision-making is “not all conscious” (but not much more than that). However, even though such research does tell us something about decision-making, it provides very limited understanding of the phenomenon at best.

For instance, objective and “simple” uncertainties and “objectified” subjective consequences, if at all included in the tasks, are negligible, for they bear no real consequences on decision-makers. The decisions studied (being mainly simple, one-shot, short-in-duration lab decision problems performed under “simple” risk and/or “slight” uncertainty) are consequently very different from everyday decisions, which might entail many important, even existentially important consequences for decision-makers. In that, they cannot be generalized to everyday life decision-making (Strle 2016), which is more “chaotic”, includes more or less well defined uncertainties, can be full of important subjective consequences, etc. Moreover, even if “subjective factors” (as subjective consequences, emotions, feelings, etc.) are seen as important for decisions, they are mostly researched superficially (for instance by using various scales, as in Dijksterhuis et al. 2006, by confronting the subjects with a simple question, as in Bechara et al. 1997) or derived from “objective” behavioral measures (as in Bechara et al. 1997 or De Martino et al. 2006).

The fact is that most contemporary researchers of decision-making do not consider the experienced, subjective character of decision-making seriously and hence have no way of knowing how decision situations – even simple lab-decision problems – are understood by decision-makers and how the decision-making process actually unfolds. This is clearly the case, for instance, in Dijksterhuis’s et al. (2006) research, where researchers have no clue about how participants understand the purported complexity of choices, how they understand the characteristics of cars that are presented to them, whether they were in fact consciously thinking about the choice in the conscious thought condition, etc. (see Newell and Shanks 2014; Strle 2013). In that respect, mainstream objectivistic accounts of decision-making provide a very limited account of decision-making at best.

My goal is not to delve further into the particular problems of such research, but to make a more general point that is common to all classic and most mainstream approaches to understanding and researching decision-making (I will try to explain this in more detail in the last part of the paper). Namely,

the question of what sense and meaning, if any, decision-making and decisions have for decision-makers is not asked and even less so answered. This is a very problematic aspect of decision-making research, especially since it not only leads to the postulation of abstract and general theories of decision-making that are supposedly also valid for decision-making in everyday life, but also to the problem that researchers do not know how participants actually understand decision situations or go about deciding (how they understand alternatives, uncertain events, outcomes, subjective consequences, etc.) in already severely limited laboratory settings.

3.2 Embodying decision-making: from weak embodiment to enaction

94

In recent years, there has been a surge of proposals for “embodying” decision-making. Such proposals claim, for instance, that emotions (as bodily states) play an essential role in decision-making (Damasio 1994); try to understand decision-making as a dynamic, time-pressured activity (e.g. Cisek and Pastor-Bernier 2014); emphasize the importance of the brain’s sensorimotor regions for (perceptual) decision making (Filimon et al. 2013); study mechanisms of bidirectional and dynamic influences between action, perception, and decision-making (de Oliveira et al. 2009; Lepora and Pezzulo 2015); emphasize the importance of interactions between agents in social (neuro)economics by considering how the information provided by bodily signals influences the way we make economic decisions (Oullier and Basso 2010). Nevertheless, looking into the literature on embodied decision-making, one quickly realizes that embodiment here is understood in the weaker, representationalist, and naive-realist sense.

Oullier and Basso (2010), for example, are the only authors who refer to the work of Varela or other enactivists among the cited papers on embodied decision-making, although I do not see that they fully grasp the consequences entailed by enactivism. This is quite clear in their incorrect claim that the “affect heuristic can be viewed in terms of embodied cognition or ‘enaction’ [Varela et al. 1992]” (Oullier and Basso 2010: 293). Looking at the seminal paper on affect heuristic (Finucane et al. 2000) it is not hard to see that it

is firmly entrenched in the presuppositions of traditional cognitive science. Researchers, for instance, espouse the traditional “dual-process theory” view of the mind, which takes affect and analytic thought as two separate types of processes (contrary to enactivist views; see Colombetti 2014), conceptualize affect as an “affective tag” of representations of objects, etc. To provide another example, Lepora and Pezzulo (2015) claim that “the action dynamics of our bodies causally influences our central cognition, which is a core assumption of embodied theories of mind” (ibid.: 1). This claim presupposes a modular view of cognition, in which body dynamics are still seen as separate from “central cognition” rather than essentially constitutive of it, as enactivism would have it. Furthermore, the notion of “central” cognition clearly reflects the “old-school” psychological theories of “the central executive”, etc. Damasio’s (1994) account of the influence of emotions on decision-making – inasmuch as he conceptualizes emotions primarily as body states – can be subsumed under embodied decision-making theories. Nonetheless, he – as most other embodied decision-making researchers – views emotions (and the body) as separate from “higher-level” cognition and conceptualizes them in the traditional stimulus-response manner. Last but not least, all of the above-mentioned embodied accounts of decision-making do try to provide an account of the role of the body, but the lived (experienced) body is not taken into consideration at all. As pointed out by Varela et al. (1993), this double sense of embodiment has been largely absent from classical cognitive science and is still absent from contemporary accounts of embodied decision-making.

The cited embodied accounts of decision-making do solve some of the problems of classic decision-making research programs (i.e. they try to move away from conceptualizing decision-making as a purely rational, abstract, higher-level information-processing, non-dynamic, and non-bodily activity), and are thus a welcome move towards a better understanding of decision-making. However, they retain the focus on studying *simple* decision-situations in an *objectivist* way and do not, by any means, endorse the stronger commitments of enactivism. As such, most traditional and mainstream accounts of decision-making tend to leave out what is essential to, and constitutive of, decision-making – namely, what sense and meaning

situations, the process of decision-making, and decisions themselves have for decision-makers.

4. Decision-making as experienced sense-making

Di Paolo et al. (2010) characterize five constitutive and intertwined ideas that define the enactive approach: autonomy, sense-making, emergence, embodiment, and experience. Although all five are necessary for enactivism, I will focus on the notions of sense-making and experience, and show how they pertain to a better understanding of decision-making.

Di Paolo et al. (2010) characterize sense-making in the following way: “Exchanges with the world are inherently significant for the cognizer and this is the definitional property of a cognitive system: the creation and appreciation of meaning or sense-making in short” (ibid.: 39). In this regard, all of an agent’s (cognizing) activities necessarily presuppose that the world, the agent’s activities, and the relation of the agent with their world are imbued with meaning. But where does this meaning come from? As said before, meaning does not lie in the objective world, waiting to be discovered by the agent, nor is it already present “inside” the agent, who somehow imposes it on the world. Rather, meaning is being created by agent’s interactions with the(ir) world. In this sense, sense-making presupposes a certain perspective, from which meaning is being “created”. It presupposes an experiential perspective that is always present for the agent (and not (only) for an observer), a perspective from which the agent cannot “escape”. Colombetti makes this point clearly:

“Sense making [...] necessarily entails a point of view from which the system and the environment are evaluated. The adaptive autonomous system is not just a unity of interrelations among processes but a perspective on the world that generates meaning and norms for itself, a locus of inwardness [...] The enactive notion of sense making is also intimately related to the one of Umwelt (literally, “world around”), in Uexküll’s ([1934] 2010) sense of the environment as experienced or lived from the organism’s perspective. For a living system to be a sense-

making system is to live in a world that is always an Umwelt, namely, an environment that has a specific significance or value for it. [...] Cognition from an enactive perspective is, rather, the capacity to enact or bring forth a world of sense, namely, an Umwelt that has a special significance for the organism enacting it. (Colombetti 2014: 17–18)”

Looking at decision-making, it is not hard to see that decision situations, decisions, and the process of decision-making cannot be separated from the significance and meaning they have for decision-makers. Decision-making is always a perspectival activity from which decision-makers “enact or bring forth a world of sense” that is, and cannot but be, significant and meaningful for them – activity, which is always imbued with the felt horizon that the embodied decision-maker brings forth. Let me now delve deeper into some ideas and provide some examples that show how decision-making should be viewed and researched as an activity of experienced sense-making.

97

Contrary to what most accounts of decision-making imply, alternatives are not entities existing independently of decision-makers, lying somewhere in the objective world or being definable from the researcher’s third-person point of view. Rather, they “exist” (or not) only in *the eye of the beholder*, who interprets (or not) a certain situation as one that *affords or calls for* decision-making. Some qualitative studies on decision-making make this point very clear. Klein, Calderwood and Clinton-Cirocco’s (2010) report on the qualitative study of expert fire fighters’ decision-making nicely shows how expert firefighter commanders were not, in fact, choosing or deliberating between alternatives when trying to “decide” what to do in real-life firefighting situations. Rather, they considered (followed) one feasible course of action. They, in fact, did not make any choices – a finding that researchers could not have reached by considering only the “behavioral” or neural responses of expert firefighters in virtual lab settings. If, for instance, firefighters were faced with alternative courses of action in a lab, neatly presented to them on a piece of paper, and told to choose the best one, it would easily happen (as does in most quantitative research on decision-making) that researchers would interpret firefighters’ behavior as deliberation between alternatives. This would be a rather unwarranted conclusion. In light of these considerations,

most laboratory studies of decision-making are limited from the start, for they do not even have an idea whether subjects would, if provided with alternatives or not, interpret a decision task as one that must be decided upon.

Van Manen's (2014) phenomenological study of parents' experience of "ethical decision-making" in neonatal intensive care further shows that the "same" or very "similar" decision situations – presented alternatives included initiation, limitation, or withdrawal of medical therapies – can be understood, experienced, and carried out in very different ways, depending on how the decision-makers understand and interpret situations, uncertainties, consequences, etc. In his study, he identified five "interpretive themes" of parental decision-making:

98

"The first "category" – "a decision that was never a choice" – is illustrated by two parents who felt pressured by doctors to decide between leaving their son on, or taking him off, life-support. Despite the fact that they were aware that he, if left on life-support and survived, could end up severely disabled, they did not see the situation as a decision situation: "We just wanted to let him have a chance. If he was to die, he would die on his own. We did not want to take his death away from him. (Van Manen 2014: 283)"

"The second – "a decision as looking for a way out" – is exemplified by parents faced with a similar situation (they had to choose whether to give their daughter dexamethasone without which she would die, but which, if administered, could damage her brain). They, quite unlike the first parents, deliberated about various options, uncertainties, and consequences (what they knew and what not; what would life be like for their child and for them), but in the end felt overwhelmed by the many uncertainties and decided to leave the choice to a medical examination of their daughter's brain."

"The third – "a decision as thinking and feeling oneself through the consequences" – shows that some parents, instead of deliberating

about the knowns and the unknowns, rather felt themselves through the consequences of a purported decision.”

“The fourth category – “a decision as indecision” – is illustrated by parents who had to decide whether to save their son’s life or not, but he would almost certainly be impaired if he survived. The father reports thinking about the various consequences of having an impaired child (for his other children, what they would have to sacrifice, etc.), but he could not settle upon a decision. For the parents, the only possible “decision” was indecision.”

“The last category – “a decision as something one falls into” – is exemplified by a mother, who was in a perpetual state of having to decide between palliative care and heart transplantation for her daughter. Although she had already decided, she kept coming back to process of deciding. At the end she “fell” into the final decision: “[A]t some point, I stopped hearing the risks of transplantation, and I finally knew what we had to do. [...] I had to give her the chance of transplantation no matter the risks, no matter what she may have to go through, even if she died on the waiting list. I had to do that as her mother. (Van Manen 2014: 285)”

Let me provide some further examples. Imagine, for example, a rather “simple decision situation” of choosing the flavor of ice cream. For some decision-makers this is a rather simple “task”. For instance, they would look at the range the shop has to offer, imagine how various flavors tasted, and choose accordingly. For others, on the other hand, this could be a rather difficult and longer lasting endeavor, involving strenuous information-gathering as to which shops serve the most healthy ice cream, consideration of one’s dieting goals and the possible consequences of eating too many sweet things, and the feelings of anxiety and doubt. Still for others, such a situation would not represent a decision situation at all, for they always opt for chocolate ice cream. If such an example seems too trivial, let us imagine a more “complex” decision-situation. A student, having to

choose what to study after finishing high-school, can for instance know exactly what they want to study and go on to study what they actually want (hence: this is not a decision-situation for them). On the other hand, we can imagine a student deliberating about the pros and cons of various study programs, thinking about their career, feeling (or imagining feeling) various potential future consequences that a given choice might bring and considering their broader goals and life aspirations. Moreover, one student might enjoy thinking and feeling about their future, while for some other student the process might cause anxiety and uncertainty about what they actually want, about their identity, etc. Still another student might gather all the information they deem important, forget about the choice, and, when the deadline for enrolling arrives, simply decide according to what their intuitive feelings “tell” them at the moment. One student might perceive the choice as existentially important, the other as something that one should not spend too much time on.

100

Van Manen’s (2014) phenomenological study of decision-making and the presented imagined decision scenarios – which can be clearly understood/interpreted in some radically different ways by decision-makers – show that decision situations, alternatives, uncertainties, consequences, etc. cannot be found in the “outer”, objective world or be defined from the perspective of other agents or researchers. Rather, they are constituted by the significance which decision-makers cast onto their world, that is, by what sense and meaning they have for the individual decision-makers that enact them. As such, the question of how people go about deciding cannot be answered without seriously, rigorously, and systematically considering decision-makers’ experiential perspective.

Decision situations investigated by van Manen (2014) and the imagined examples presented above could be claimed to belong to specific types of decision situations or decisions. We should bear in mind, however, that this is a claim stated from a third-person perspective. What I am trying to say is, in fact, quite straightforward: seemingly similar “decision situation types” can stand for quite different decision situations from the perspective of different decision-makers. That is, decision situation types as general categories do not exist. By that, I do not wish to claim that decision-makers necessarily understand/interpret decision situations in radically *and* arbitrary different ways, since they are, after all, embedded in to a certain degree similar

socio-cultural and physical environments. I simply wish to state that they understand/interpret them a) in different ways and b) that we cannot know how they understand/interpret them, if they even do, without considering their experiential sense-making – a point that might seem obvious to some, but is blatantly (and unwarrantably, one should add) denied by others (most contemporary approaches to understanding and researching decision-making).

Thus, it is more sensible to try to uncover (similarly to van Manen 2014) *potentially* general ways (or “types”) of decision-making⁴ or of enacting decision situations than types of decision situations or decisions themselves (such as ethical, consumer, simple, complex, under risk, under uncertainty, etc.). For example, two decision makers can understand (enact) a “similar type of decision situation” in entirely different ways: one, for instance, as a complex decision under “great” and “varied” uncertainty, another as a simple decision that is hardly worth any consideration. Thus, it seems more sensible and productive to look at how individual decision-makers enact *decision situations* and try to see whether general “categories” or ways of enacting decision situations can or cannot be uncovered (see also the last paragraph of this part of the paper), than trying to define supposedly objective “types” of decision-situations or decisions that are allegedly valid for all decision-makers that find themselves in similar circumstances.

101

These and similar considerations, especially those presented in this part of the paper (“Decision-making as experienced sense-making”), constitute the main reason why I advocate the rigorous and systematic study of experience, as exemplified by van Manen (2007; 2014), Petitmengin (2006; 2013), and other similar (neuro)phenomenological research that aims at empirically investigating experience in a non-superficial way (e.g. by following Husserl’s

4 By “types of decision-making” (meant as a process) researchers usually refer to rational, deliberate, intuitive, etc. decision-making – a distinction that some find useful, but is in fact quite superficial if one considers studies such as van Manen’s (2014).

“method” of phenomenological reduction⁵).

I must emphasize that I *do not* claim this primarily because I believe enactivism or phenomenology to be the “true” accounts of the mind, but for the sole reason that, when thinking about decision-making and its various aspects – hopefully, without too many naive implicit theories and beliefs, including the ones coming from my knowledge of enactivism and phenomenology –, I cannot but conclude that traditional concepts, theories, and experimental practices do not do justice to it as a whole. Furthermore, I do not wish to claim that a full-blown phenomenological account of decision-making is *necessary*, but that phenomenology – be it empirical or philosophical – and its methodological ideas should be seriously considered and incorporated into research on decision-making.⁶ It is true that a more thorough analysis and empirical exploration of decision-making as experiential sense-making in everyday life is needed, but this endeavor exceeds the goals of this paper and remains a project for the future.

102

The final point I want to make is that phenomenology, or at least certain strands within it (particularly those based on the ideal of “eidetic variation”), has, in my opinion, one limitation (or, rather, one limiting goal) as a method for systematic inquiry into experience of decision-makers, insofar as it attempts to capture the invariant structures of experience, the very conditions and structures of phenomenality as such, and not the here-and-now of

5 Varela (1996: 336–38) proposes to phenomenological reduction as the method for the systematic investigation of experience, which – by disciplined training in bracketing our habitual beliefs and directing our observations towards “the arising of thoughts themselves”, in becoming intimate with the observed and experienced, and in describing the observed – enables us to rediscover “the primacy of human experience and its direct, lived quality that is phenomenology’s foundational project” (Varela 1996: 335–36). Others (e.g. Kordeš and Markič 2016; Varela et al. 1993) have proposed using meditation practices (e.g. mindfulness) as methods for researching experience in the scope of cognitive science. Still others propose building experimental designs around phenomenological insights (“front-loading phenomenology”, e.g. Gallagher 2003).

6 It is a question as to whether one can merge phenomenology into cognitive science (i.e., the problem of naturalizing phenomenology), since they espouse some radically different epistemological and ontological presuppositions (see Gallagher and Zahavi 2012; Kordeš 2016; Petitmengin 2006; Roy et al. 1999; Vörös 2014; Zahavi 2004 for various aspects of and solutions to the problem of naturalizing phenomenology).

individual experience. I would argue that, at least in terms of understanding the sense and meaning of decision-making as it is brought forth by individual decision-makers from their own experiential perspective, understanding the general structures of consciousness or the *a priori* conditions of experience (in decision-making) is not enough. For, if individuality is not considered, one possibly loses oneself in generalities and theoretical assertions, as much as objectivistic science does. Furthermore, individuality is, in my opinion, always present in decision-making, and thus cannot be deduced from “discovered” generalities. I believe that one needs to understand both: the constitutive, intersubjective structures of consciousness, and the individual, personal sense, and meaning that always permeate our consciousness.

5. Conclusion

In this paper, I presented some of the aspects of understanding and investigating decision-making that show decision-making to be an activity that cannot but be “inherently significant” for decision-makers: decision-making that makes sense and has meaning for and in the perspective of decision-makers with a body, experience, and environment that co-determine and co-create each other; decision-making that, if removed from sense and meaning, as a phenomenon would in fact not make much sense, and would probably not “exist”. If the significance of decision-making for decision-makers is not considered, all researchers can hope for is that their abstractions about what is going on in the minds of decision-makers, when they are allegedly deciding, are not too far from “reality”. What feeble hope, indeed!

In this regard, enactivism and phenomenology seem to provide a more promising starting point for understanding and investigating decision-making than mainstream accounts of the phenomenon, since they – each in its own way and right – see the subject and their experienced sense-making as central to any understanding of the mind. Although there are many problems to be encountered along the path of understanding the experienced sense and meaning of decision-making, I believe that opening new horizons of and for the mind is what contemporary cognitive science needs, if it is to understand the mind and decision-making in all its richness and complexity.

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104

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106

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