Choice Awareness and Manipulation Blindness:

A cognitive semiotic exploration of choice-making and memory

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·Abstract·

"Choice blindness" (CB) refers to a certain tendency to accept a choice that is presented to us as if it were our own, even when we have never made it. In the last decade, CB has been treated as a research tool in a series of experiments in different domains and modalities (e.g. Johansson et al. 2005, 2008; Hall et al. 2010, 2013; Sagana et. al 2014; Cochran et al. 2016) in order to study the relation between choice-making and phenomena such as preference, intention, and introspection (Johansson et al. 2005, 2008). Recently, the focus has been drawn to the role of memory in CB, but such research is still very limited and mostly concerns eyewitness recollections (e.g. Sagana et al. 2013; Cochran et al. 2016; Stille et al. 2017). Our occasional failure to detect choice manipulation has not been yet fully explained (Johansson et al. 2005; Sagana et al. 2014), but is argued to have implications for the ideas we have of ourselves as reliable decision makers, the use of introspection as research method, and the scope of our conscious awareness (Johansson et al. 2008; Cochran et al. 2016).

This thesis, through the prism of cognitive semiotics, explores the phenomenon of choice in its relation to memory, introducing a two-level hierarchy of choice-making. Through an experiment based on preference it investigates the way different factors, such as memory, consequence, and affectivity influence our choice-awareness. Forty-three participants were assigned two tasks combining 1) choices with a different degree of consequence (more/less) – based on different task instructions, and 2) a different degree of affectivity (high/low) – based on stimuli with different degree of abstractness. Participants were first asked to state their preference between two alternatives (*choice*) and then to confirm whether some of the (chosen and non-chosen) pictures that were presented to them belonged to their choices (*memory*). Lastly, they were asked to justify the reasons for their choices, although some of the trials had been manipulated (i.e. the preferred card was switched with the non-preferred one) (*manipulation*). Half of the manipulations were detected, while the majority of detections (75%) occurred for the choices participants remembered correctly. While consequence did not seem to influence detection, affectivity did. Unlike other choice experiments that investigate "blindness", the results indicate that manipulation blindness is subject to varying factors, such as memory and affectivity, implying that we *are* aware of our choices and that we have, to different degrees, access to our intentional acts.

Keywords: Affectivity · Bartlett · Categorial Intuition · Choice · Choice Awareness · Choice Blindness · Cognitive Semiotics · Consciousness · Consequence · Memory · Merleau-Ponty · Operative Intentionality · Phenomenology · Remembering · Sedimentation · Veracity ·

·Acknowledgements·

There is a part of everything that remains unexplored, for we have fallen into the habit of remembering whenever we use our eyes, what people before us have thought of the thing we are looking at. Even the slightest thing contains a little that is unknown. We must find it.

Gustave Flaubert

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We are very influenced by completely automatic things that we have no control over, and we don't know we're doing it.

Daniel Kahneman

You yourself are your act…You have exchanged yourself for your act…Your meaning is what shows itself for all to see…Your meaning is your deed, your hatred, your love, your fidelity, your discoveries…A man is but a web of relations.

Antoine de Saint Exupéry

1.INTRODUCTION

The phrase "dis-moi ce que tu manges, je te dirai ce que tu es" (Anthelme Brillat-Savarin 1826) or else, "you are what you eat" gained much prominence from the 1960's onwards as a slogan for healthy eating. However, what underlies this phrase goes beyond food choices and their potential consequences to our health, to the idea that we are responsible for the choices we make and that these choices define who we are—or simply, as J. P. Sartre (1946) put it, we are our choices. The libertarian view that we can freely will actions, in the sense of both conscious mental operations (such as preferences, choices, etc.) as well as bodily performances, implies that our actions are not causally determined by factors outside our volitional control and that we are exposed to the possibility of alternatives, rendering us the (moral) agents of our choices and actions (Kane 2007). Libertarianism is opposed to the deterministic view that only one course of events is possible, manifested in many different doctrines (e.g. theological, psychological, etc.) all sharing the idea that the past and the laws of physics determine only one possible future; ergo the way things occur is inevitable. The philosophical debate on free will was raised by the ancient Greek thinkers and remains alive until now. The goal of this thesis is not to resolve the debate, but rather to explore it, focusing on the phenomenon of choice-making in its relation to memory.

"Manipulation blindness", (more commonly known as "choice blindness", see Section 2.6) in the present thesis' title, refers to a certain tendency to *accept* a choice that is presented to us as if it were our own even if we have never made it (or more concretely, our failure to detect the switch of a preferred choice to a non-chosen one). This effect was originally presented in 2005 by Petter Johansson, Lars Hall, and Andreas Olsson, and has been demonstrated thereafter in a series of experiments (e.g. Johansson et al. 2005, 2008; Hall et al. 2010, 2013, Sagana et al. 2014; Cochran et al. 2016). Within the field of cognitive science, "blindness" phenomena are treated as typical of human cognition and are addressed in established research paradigms (e.g. Kahneman 2012). "Choice blindness" is claimed to be "a general research tool to study decision making, intentional action, introspection, and the dynamics of preference and change" (Johansson et al.: 2008: 154). This view has implications for the ideas we have of ourselves as decision makers, and the use of introspection as research method (Johansson et al. 2005; Cochran et al. 2016). However, when it comes to explaining what underlies "blindness" effects, little is known

apart from some "viable candidates"[1] (Johansson et al. 2008: 153). Most research seems to be concerned with the applicability of the initial "choice blindness" study in different domains (e.g. Hall et al. 2010, 2012; Merckelbach et al. 2011; McLaughlin & Somerville 2013; Sauerland et al. 2013a; Sagana et al. 2014; Stille et al. 2017) and the potential effects of "blindness" on our self-conceptions (e.g. Merckelbach et al. 2011; Sagana et al. 2013; Cochran et al. 2016; Stille et al. 2017).[2] As far as explanations are concerned, research mainly revolves on the axis of potential cognitive "mechanisms" (Johansson et al. 2008; Sagana et al. 2014). Nevertheless, the tendency to be occasionally "blind" to the manipulation of our choices might be largely influenced by other parameters such as memory and degree of involvement in the choice-making, suggesting that the principal conception and interpretation of the phenomenon could be limited.

Traditional cognitive science regards the human mind as a system of complex, highly automatic processes that operate beneath the level of cognitive awareness and considers thought to be too quick to be focused on, and thus inaccessible to consciousness (e.g. Fodor 1987; Dennett 1987; Lakoff & Johnson 1999). Accordingly, the "cognitive unconscious" (Lakoff & Johnson 1999: 9) is considered to shape automatically and unreflectively (nearly) all aspects of our experience, remaining completely opaque to introspection. The claim that we lack access to our mental processes (Nisbett & Wilson 1977) seriously questions the scope of our conscious awareness and implies that the way we normally take ourselves to be (e.g. the actions we make, the arguments we put forth when we deliberate, choose, etc.) is neither accurate, nor trustworthy; in fact, the instances of accurate report are argued to be rare and exclusively due to "incidentally correct employment of a priori causal theories" (ibid: 233). It is further often asserted that the processes responsible for deliberation and decision making operate according to deterministic causal laws (Shepherd 2014). However, regarding ourselves solely as subject to physical laws without any role for conscious awareness leaves agency and other panhuman phenomena such as intersubjectivity, rationality, and empathy out of the picture, in the worst case implying that they are only illusory.

The need for a richer approach that would amalgamate the human and social sciences with respect to consciousness has been acknowledged within the transdisciplinary field of cognitive semiotics (e.g. Sonesson 2007, 2009, 2009a, 2009b; Zlatev 2009, 2012, 2015; Konderak 2018). Cognitive semiotics brings the fundamental notion of meaning into focus by combining theoretical ideas and empirical methods (primarily) from semiotics, linguistics, phenomenology and cognitive science, relocating reason and rationality from the "computer-like function" of the brain to that of the experiencing, embodied mind and the intentional, intersubjective nature of our existence (Zlatev 2005, 2007; Sonesson 2009; Zlatev & Bloomberg 2016). Within this line of research, human beings are regarded as embodied conscious agents, directed towards all aspects of experience on the basis of our bodily interconnection to the world (see also, Varela et al. 1991; Zahavi 1999; Gallagher 2005; Thompson 2007).

The current thesis adapts the pluralistic view of cognitive semiotics of embodied perception and subjective experience to investigate the phenomenon of individual choice and conscious awareness through a

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[1] See Chapter 2, Section 2.6, footnote 26.

[2] For example, whether the acceptance of manipulation influences people's future attitudes and behaviours by modifying their original preferences.

choice manipulation experiment based on preference. Unlike other "choice blindness" experiments (e.g. Johansson et al. 2005; Hall et al. 2013, 2010) that measured participants' responses in identifying the manipulation, as well as the motivations they provided to support their choices, the experiment described in this thesis focuses on *remembering*. The main goal is to investigate whether memory for choice can influence participants' detection of manipulations by assessing their verbal reports (for both manipulated and non-manipulated choices).[3] Hence, the present thesis' scope revolves around the way factors such as memory, consequence, and affectivity influence our self-awareness of choice, and poses the following research questions:

o Does *memory* for choice play a significant role in manipulation blindness? Will participants' detection of manipulation be higher for the choices they remember making and lower for those they did not?

o Does *consequence* for choice affect remembering? Based on the assignment of different types of tasks, will participants remember better the more consequential choices over the less consequential ones, and thus, detect/resist manipulation more for the former and less for the latter?

o Does *affectivity* influence recall? Based on stimuli with different degree of abstractness, will participants remember better the choices with higher affective valence over those with lower, and hence, detect/resist manipulation more for the first and less for the second?

The remainder of the thesis is divided into six chapters. Chapter 2 introduces the theoretical background, as well as the general hypotheses. Then, Chapter 3 explains the methodology for the choice experiment, and concludes with specific hypotheses. Chapter 4 presents the results and Chapter 5 the discussion of the results. Lastly, Chapter 6 provides a conclusion that summarizes the study.

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[3] In the current thesis, memory is treated as the adaptive activity of remembering (see Section 2.4), and thus, both terms will be used interchangeably.

After all, that's what we are. We are robots made of robots made of robots. We're incredible complex, trillions of moving parts. But they're all non-miraculous robotic parts.

Daniel Dennett

If you believe that your thoughts originate inside your brain, do you also believe that television shows are made inside your television set?

William W. Ellis

2. THEORETICAL BACKGROUND & GENERAL HYPOTHESES

2.1. INTRODUCTION

This chapter shortly introduces the field of cognitive semiotics and its methods, as well as its central notions in the study of meaning. In an attempt to provide a foundation for issues such as our awareness of choice, the philosophical tradition of phenomenology is introduced and the notion of *intentionality* is discussed. Different kinds of intentionalities are presented in relation to the way we, as embodied agents, are placed in the world and engage with different perceptual objects, as well as with others. Then, the phenomenon of choice is discussed from a phenomenological perspective, followed by the description of the so-called "choice blindness" effect and the presentation of the notion of *manipulation blindness*. It is of special interest for this study to better understand how varying factors affect cases when we are "blind" to manipulations of our choice-making, and in particularly, the role of memory.

2.2. COGNITIVE SEMIOTICS

In the most general terms, the discipline of cognitive semiotics cannot be seen as a subfield of either cognitive science or semiotics, but rather as the strategic crossroad of multiple disciplines like semiotics, linguistics, philosophy, psychology, anthropology, and cognitive science (Zlatev 2015) with an epicenter on the conception of meaning and above all its representational aspects (signs), and the way these are continuous with – and become available to us through – consciousness (Sonesson 2009). Deriving much of its inspiration from phenomenology (see Zlatev 2008, 2018; Sonesson 2009), cognitive semiotics maps out the subjective (personal) and intersubjective (social/cultural) character of the human mind, with the living body as the protagonist in the structuring of experience and meaning. Through its pluralistic and non-reductionist character, cognitive semiotics helps "unify or at least defragment our worldviews, […] understand better – and thus deal with – the dialectical relationship between individual freedom (autonomy) and collective dependence (sociality)" (Zlatev 2015: 1063).

Admittedly, all research involves the applicability of theories in practice; yet, ideally, applications not only contribute to support the initial theoretical concepts, but at the same time benefit these so that they become richer, paving the way for future advancements. It is exactly this kind of conceptual and empirical "feedback

loop" (ibid: 1058) that is central for cognitive semiotics: "it formulates concrete research programs that not only state programmatically that the "method and theories" of the humanities and sciences need to be integrated but also actually go ahead and "do it"" (ibid: 1058). An indicative example would be that of "neurophenomenology" (Varela 1996), the embodied approach to the neural mapping of consciousness (see Section 2.3).

This naturally leads to the way cognitive semiotics empirically addresses issues concerning meaning-making by moving away from the positivist methodological tradition of the natural sciences to introduce a triangular combination of methods. The application of methodological triangulation, as stated by Zlatev (2009) uses data from first-person "subjective", second-person "intersubjective", and third-person "objective" perspectives. The distinction between these three kinds of methods is characterized by the type of perspective the researcher takes to data, as well as on the nature of the phenomena under study. This allows to integrate results from studying the experience itself, e.g. through intuition (i.e. intersubjective experience), and introspection (i.e. idiosyncratic, subjective experience) (Itkonen 2008), other subjects and social interaction, and making controlled, intersubjective observations, e.g. through experimentation. In this way, cognitive semiotics offers a broader spectrum of methods and ascertains the validity of "subjective" and "intersubjective" data to the study of meaning and consciousness, which are arguably essential for understanding the phenomena in question.

2.3. PHENOMENOLOGY

2.3.1 PHILOSOPHY AND METHOD

Core notions of cognitive semiotics are drawn from phenomenology, a philosophical school founded by Edmund Husserl in the early 20th century and furthered by thinkers such as Scheler, Heidegger, Gurwitsch, Sartre, and Merleau-Ponty, to name some of the most prominent ones. The phenomenological tradition accentuates "the study of human experience" (Sokolowski 2000: 2) where self, others and the world and are tied together in an intimate fashion, "reciprocally illuminat[ing] one another and […] [thus] understood in their interconnection" (Zahavi 2001: 151). The point of departure for many phenomenological approaches is the human body, where experiences are not internal or "stored" in the mind/brain, but are sensed and expressed through our bodily actions, binding us with the world and explicating our relationship with it (Gallagher 2010). The embodied subject as part of the lifeworld, or *Lebenswelt* as Husserl (1936) called it, is directed to various intentional objects (anything that we are aware of), and as such it "is neither internal nor external, but rather beyond this artificial distinction" (Zahavi 2001: 153). Thus, phenomenological philosophy contributes to our deeper understanding of the world through the way things are given to us, and of ourselves through the way we perceive and experience them (Sokolowski 2000). Phenomenological psychology does the same, but in a more empirical manner (Husserl 1962).

Even if more than half of a century has passed since Merleau-Ponty stated that phenomenology is still in a process of being defined, this statement holds true until today precisely because it is "still alive [and] continually transform[ing] itself" (Gallagher 2010: 183). To some degree, "phenomenology is a method of

description [and] as such, it should really be considered an empirical method" (Sonesson 2009: 127) [4], which is capable of going beyond what we are focally conscious of (e.g. of the presentational mode of our attentive or alert awareness) (Husserl 1989) [5] to bring "semi-conscious, pre-conscious and unconscious parts of consciousness into awareness" (Sonesson 2009: 139). [6] Most generally, phenomenology as philosophy and method with focus on lived experience and intentionality "helps us reclaim a public sense of thinking, reason, and perception. It helps us reassume our human conditions as agents of truth" (Sokolowski 2000: 12).

Drawing from phenomenology's rich – both theoretical and empirical – dimensions, there are various approaches aiming to combine phenomenology and cognitive science (Gallagher & Schmiching 2010) in the footsteps of Merleau-Ponty who emphasized the reciprocal relation between phenomenology and the natural sciences. Any attempt of "naturalizing phenomenology" (Petitot et al. 1999) that places phenomenology into an explanatory framework in accord with the natural sciences, however, must respect the delicacy of such cooperation. As stated by Zahavi (2010: 14), "it is important to encourage the exchange between phenomenology and empirical science, but the possibility of a fruitful cooperation between the two should not make us deny their difference". As a way to demonstrate how phenomenological principles may have empirical correlates, Varela (1996) introduced the notion of neurophenomenology exploring correlations between first person "subjective" data (on experience and consciousness) and third person "objective" data on brain activity and neuropsychology. Likewise, Lutz and Thompson (2003) pursued a number of studies addressing challenging methodological issues of combining the study of consciousness and meaning with that of neural activity. Thompson (2007) enriched further the neurophenomenological methodology to that of second person "intersubjective" methods, regarding the interaction between the experimenter and the participant as a form of social interaction and thus deserving study.

2.3.2. PERCEPTION AND OTHER FORMS OF INTENTIONALITY

The intentional nature of consciousness, i.e. "consciousness *of* something" (Sonesson 2009: 128), implies that experience is the outcome of our situatedness in the world and our directedness towards the "objects" that are included in it (from inanimate objects and living things to conventions, norms, ideas, etc.). The same intentional object can be accessed through different forms of intentionality that are often intertwined: perception, remembering and imagination are some of the basic kinds of acts of consciousness (Sokolowski 2000). Perception involves the direct presentation of objects and intends them in their presence in the "here and now".

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[4] In most general terms, the phenomenological method can be described as a special type of reflection or attitude about the intentional objects that we, as agents, are directed at in relation to the way they are experienced, i.e. the various kinds of intentional processes (as they will be discussed in the Section 2.3.1), or as the method where "we look *at* what we normally look *through*" (Sokolowski 2000: 50).

[5] Following Husserl's terminology throughout this thesis: in *presentation* (Vorstellungen), the (intentional) object is given in its direct, lived presence; in *presentification* (Vergegenwärtigung), as in imagination, the (intentional) object is not directly and intuitively given; in *representation* (Repäsentationen), the (intentional) object is given with the mediation of signs. For the semiotic relevance of the distinction, see Sonesson (2015).

[6] The notion of the unconscious in the phenomenological sense concerns background conditions present in all intentional acts (Brooke 1986: 129), which constitute integral parts of the structure of experience, and thus, it is, from a broader perspective, accessible to consciousness. See Section 2.5.1 for more discussion.

Remembering and imagination, rather intend their objects in absence where they are presentified. In the former (remembering), the object is located in the lived past, while in the latter (imagination), in a fictitious time and place. In other words, remembering operates with the belief in the existence of what we have experienced, while imagining does not (Sokolowski 2000). However, our default state is not that we live in perception and "then at some moments decide to plunge into displacements; rather the perceiving and the displaced selves are always being played off against one another" (ibid: 74).

In perception, we experience an object through the sides it is presented to us, some of which are shown and visible, intended in their presence, (e.g. when looking at the Mona Lisa painting in Louvre), while others are hidden and invisible, intended in their absence, (e.g. knowing that there is the backside of the painting, although we cannot see it); thus, our perception is the interplay of presences and absences. There are also particular ways in which the side of an object is presented to us – the perspective from which we perceive it (open to many perceivers) – as well as our subjective dispositions in the current time and place (our own moods, health state, etc.): the "temporally individuated presentation of an object" (ibid: 19). Hence, we perceive the totality of an object, its identity, through a combination of ways, but at the same time, as it being one, public and open for everyone.

When something is presented to us and intended in the here and now, rather than in its absence, it is regarded as present; this experience constitutes our intuition of the thing that is present to us and is reached as the end stage of a particular kind of intentionality. Consequently, according to phenomenology, intuition is initially generated by the intentional act of perception to refer to objects that are brought in presence (Sokolowski 2000: 35). However, perception does not only include presences and absences, but also the process of recognizing the object and making judgments about it, allowing us to discover a new level of the object's identity. The application of perceptual judgments on what we experience, called *categorial intuition*, is accomplished by a shift from the "simple" way of perception (e.g. admiring Mona Lisa) to a more complex one (e.g. noticing that Mona Lisa is smiling enigmatically). It is crucial to note that this shift from "pure" experience to judgment comes before language, but at the same time our categorial activities may be influenced to a certain extent by the language we possess. Categorial experience is involved in our choice and decision-making acts, since it brings in the properties of reasoning and rational thinking (see Section 2.5.2).

To summarize, "perception involves meaningful relationships in which […] [we are] actively or intentionally engaged" (Brooke 1986: 127) and links us with the world we inhabit, where meanings – rather than pure sensations – become distinct and make sense through the way they are given to us. While perception may be our basic form of meaning-making, it blends seamlessly into more indirect forms of intentionality, such as remembering.

2.4. REMEMBERING

2.4.1 THE COGNITIVE LENS

Traditional cognitive science studies the interrelationship between cognition and basic mental acts (e.g. perception, attention, memory, language processing, and decision making) and suggests that the brain serves as a "recording" mechanism with neuroscientific foundations (Gallistel & King 2009). A typical view of memory is illustrated by the following statement of the Nobel-prize winner and psychologist, D. Kahneman (2013):

> All of us roughly know what memory is. I mean memory is sort of the storage of the past. It's the storage of our personal experiences. It's a very big deal. (Ted Radio Hour: May 24, 2013)

The rather cliché idea of memory as a storage device suggests that everything we experience leaves some kind of trace that we save in our mind hoping to find them later intact. Under the effect of a certain stimulus the traces are re-excited, making later recall possible. Accordingly, within cognitive science, memory is studied under the processes of encoding, storage and retrieval, and our ability for remembering is treated in terms of "(in)accuracy", "distortion", "impairment", "decay", etc. [7]

A notion that often occurs in the discussion of memory is "constructiveness" (reconstructiveness) referring to the omitted or distorted items/traces of memory. Kahneman (2011) introduces a theory where he relates the reconstructiveness of memory to the *dual* nature of the self, as opposed to the more dominant concept of multiple selves (e.g. Marcus & Wulf 1987; Singer & Salovey 1993; Connor & Barrett 2012). In Kahneman's view, the experience of an event and the memory of that experience are two different things that correspond to two discrete aspects of the self: the "experiencing self" that lives in the present and the "remembering self" that reflects on past experiences. These value and interpret the same event differently, and do not have an equal weight, since what is most significant is not experience, but the (good or bad) memory of it, which drastically determines the overall experience and the way it is stored. [8] Reasonably, some of those memories are preserved, while others are "ruined", "lost" (ignored forever by the remembering self), and/or reconstructed.

Such a take on memory is apparently characteristic of (traditional) cognitive science in general: "the most dominant trend in psychology today is to take it to mean that inaccuracy and distortion are characteristic of our memories" (Wagoner 2017: 186).

2.4.2 THE PHENOMENOLOGICAL LENS

Under the phenomenological prism, the intentional act of remembering is not that simplistic; the idea of traces that are stored away which ought to be kept and reproduced intact is abandoned altogether, since memory is not treated as the opposite of forgetting (Merleau-Ponty 2010), but rather as another way of reliving a perceived event within a mélange of presences and absences (Sokolowski 2000), as discussed for perception in the previous section. That is, we do not bring back our preserved, past experiences, but we actively reenact in presence these earlier (absent) perceptions:

> We are something like spectators when we reenact things in memory, but we are not just spectators, and we are not like viewers of a separate scene. We are engaged in what happened then. We are the same

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[7] Encoding (which can be further broken down into acquisition and consolidation stages) involves the laying down of a memory trace. Storage is the maintenance of a memory trace over time, while retrieval is the process of reactivating a stored memory for current use (Gallister & King 2009).

[8] "I am my remembering self, and the experiencing self, who does my living, is like a stranger to me" (Kahneman 2011: 390).

ones who were involved in the action; the memory brings us back as acting and experiencing there and then. Without memory and the displacement it brings we would not be fully actualized as selves and as human beings for good and for ill. (Sokolowski 2000: 71)

In the complex process we engage in while remembering (but also, imagining) the identity of the object unfolds through presentification, i.e. through intending it in time and place other than (in the direct perception of) the here and now, but at the same time, the identity of the self "transforms" too through displacement (Sokolowski 1990). Displacement (*Versetzung*), as Husserl (1966) terms it, that takes place in presentification not only allows us to discover new ways of seeing things by disclosing different dimensions of the intended objects, but also opens up new dimensions of our own selves. The new kind of self-identity that is "created" by the differentiation of the self is always in accord to the object's new identity, since the "dimensions of the object and [the] dimensions of the self are developed together" (Sokolowski 1990: 177). Hence, when we bring back the memory of an event, we do not view the event we once lived, but rather we revive and re-experience "the earlier perception of that event" (ibid: 178) opening up new possibilities for both the intended experience (the event itself) and ourselves as experiencing it.

> It is not the case that we merely know that we saw this thing at some time in the past; rather we relive our earlier perception when we remember having experienced it […]. In memory, the focus is on the object remembered, not on the memory of perception, even though the earlier perception must be reactivated in order to allow the object in its pastness–as perceived at that earlier time–to be memorially presented. The re-activated earlier perception serves as a kind of anonymously functioning awareness, one that mediates my remembering of a past event. (Sokolowski 1990: 178)

This new kind of dual (self) awareness can be explicated as "a remembering me, and a remembered me" (ibid: 178), i.e. the part of myself that right now remembers X and the part that experienced X at some time in the past (thus corresponding to the two "selves" of Kahneman (2011), but without the dissociation). These parts of ourselves put together constitute our identity, where we "always liv[e] in the present and still in the past and already in the future" (ibid: 180), where we are always simultaneously both present and displaced.

Obviously, the active process of reliving the perception of an event in the way we once perceived it implies that "errors" may happen, in the sense that we might project things into the remembered event that we would like to see or that we think we should be seeing. Yet, this construction is not treated as a fault or vice of memory, as the unwanted consequence of our "deficient" ability to remember "correctly"; under the phenomenological approach, accuracy and inaccuracy are not the central properties of memory:

> Memories are notoriously elusive; they are not tamper proof, but as such are the limitations of memory. … Their way of being right and their way of being wrong are different from the ways of being right and wrong in perception. A new manifold, a new possibility of identity, is introduced by memory, and new possibilities of error arise as well. (Sokolowski 2000: 69)

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It seems that by the recollections of our experiences – in the way these are formed, transformed and/or "forgotten" – we actively interconnect our foregoing events to the current situation in a process of constant synthesis of our past as it is remembered. Hence, in this sense, we cannot speak of pure reproductions of the past, since we "as embodied agents […] [do not] have the past as an object, but rather … we are ourselves this past" (Fuchs 2000, cited in Kozyreva: 209).

As mentioned in Section 2.3, phenomenology acknowledges all aspects of consciousness including focally conscious, semi-conscious, pre-conscious and even "unconscious" (Mishara 1990; Zahavi 1999; Sonesson 2009) as part of the "depth-structure of subjectivity" (Zahavi 1999: 206). Accordingly, in regards to memory, we ought "to think […] beyond the past as construction or as preservation" (Merleau-Ponty 2010: 208) and accept that those aspects of our past that seem to be "forgotten" do not disappear just because we cannot presentify them at will. Rather, they are incorporated in our embodied self, becoming fundamental parts of our background experience. Everything we experience, whether we remember it or not, constitutes our identity and defines our current and future attitudes. We may use the cognitive science terms of "explicit" and "implicit" memory,[9] but paradoxically the most important part of remembering belongs to "memory that does not remember" (Kozyreva 2016: 221). Or, as stated by Merleau-Ponty (2012: 413):

> Existence always takes up its past, either by accepting or by refusing it. We are, as Proust said, perched upon a pyramid of the past, and if we fail to see it that is because we are obsessed with objective thought. We believe that our past, for ourselves, reduces to the explicit memories that we can contemplate. We cut our existence off from the past itself, and we only allow our existence to seize upon the present traces of this past. But how would these traces be recognized as traces of the past if we did not otherwise have a direct opening upon this past?

In sum, the phenomenological approach to memory embraces the conscious present and the "unconscious" past in a dimension that connects the two, to synthesize the identity of our bodily existence that is manifested both explicitly and implicitly in our decisions, choices, dispositions, inclinations, habits, errors, omissions, etc.

2.4.3 THE EXPERIMENTAL THEORY OF REMEMBERING

As early as 1932, Bartlett's influential publication *Remembering* provided one of the foundations upon which modern work of cognitive psychology has been built (Kintsh 1995; Roediger 2003), contributing with significant theoretical and experimental insights to the study of memory. In fact, it was Bartlett who first initiated the notion of constructiveness, and most notably *not* as distortion, as it has afterwards been interpreted by mainstream

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[9] Explicit memory corresponds to the presentational and/or the presentified aspects of intentional remembering. Implicit memory is defined as "encompassing habitual bodily skills, […] traumatic and intercorporeal memory, as well as involuntary memories and pre-thematic recognitions" (Kozyreva 2016: 221) (See also, Casey 1987; Fuchs 2012; Summa 2014). Section 2.5 discusses these notions more with respect to the two–level hierarchy to choice, corresponding to two different kinds of consciousness, namely, operative intentionality and categorial intuition.

cognitive science (Wagoner 2017); rather, as the positive characteristic of memory that warrants us the flexibility to cope with the needs and challenges of the world we are placed in along with its wide range of continuous changes. Thus, Bartlett's (1932) conception of memory is as a functional, embodied activity, having a future-oriented social nature:

> There is no reason in the world for regarding … [the traces] as made complete at one moment, stored up somewhere, and then re-exited at some much later moment. The traces that our evidence allows us to speak of *are interested-determined, interest-carried traces. They live with our interests and with them they change.* (Ibid: 212, my emphasis)

When we remember, we do not "replay" an already known event, nor do we create a totally new one; rather, we adopt the memory of the past event to our current state of being at the particular moment with all the incoming influences we are under. In an attempt to make this claim clearer before getting deeper into Bartlett's theory, the following illustration may be provided. Sometimes when I am in a good mood, I sing a favorite song. The song, the way I act on it, is every time *same and different.* This is analogous to my past experiences of performing it as they are adopted (formed and transformed) under the different influences I am under at the given moment. I might have the (false) belief that I go ahead and sing it in exactly the same way (since the song is the same, my voice and body act in the same way and I always aim at the same outcome), but this obviously is an "illusion", since at every single time my action is marked by its own unique features. [10] Hence, our way of remembering a past event is similar to the way we respond to the particular needs of the here and now as when we perform any other action (drive our car, swim in the ocean, do karate, make love, etc.). In remembering, we adapt our past experiences into the present as they are formed and transformed under the particularities of each moment.

Bartlett (1932) theorizes that this activity (remembering) is based upon "living, constantly developing" (ibid: 200) schemata understood as an "organized setting" (ibid: 201) of past reactions or of past experiences, which are momentarily influenced by practically "every bit of incoming sensational experience of a given kind" (ibid: 200). These active settings are constructed upon our impulses (visual, auditory, etc.), allowing our response towards something in particular, but always in relation to our previous, similar responses: "determination by schemata is the most fundamental of all the ways in which we can be influenced by reactions and experiences, which occurred sometime in the past" (ibid: 201). Notably, the basic characteristic of schemata is that they do not operate individually, but as the "unitary mass" (ibid: 201) of our past subjective experiences and function in an interrelational way by connecting elements from different sources into a new form, where each element triggers another element. [11] Despite the fact that schemata are chronologically arranged, i.e. based on the temporal series

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[10] In Bartlett's (1932) example of making a stroke in tennis or cricket, every stroke depends on the new "visual experiences to those that precede, while my posture is too a result of a whole series of earlier movements in which the last movement, before the stroke is played, has a predominantly function: the stroke is literally manufactured out of the living visual and postural schemata of the moment and their interrelations" (201).

[11] "Memory is personal […] because the mechanism of adult human memory demands an organization of schemata depending upon an interplay of appetites, instincts, interests and ideals peculiar to any given subject" (213).

of the way events occurred, newer schemata of experiences do not prevail "as isolated members of some passive patchwork" (ibid: 201), and we are not restricted in accessing them temporally. Rather, schemata allow us to freely pick out the most adequate in order to respond to a present need: "in remembering, the subject uses the setting, or scheme, or pattern, and builds up its characteristics *afresh* to aid whatever response the needs of the moment may demand" (ibid: 196).

Consequently, the constructive nature of remembering designates a reflective process in which we are called up to construct our memories (of past experiences) with the integration of new influences under which we are constantly subjected. Hence, adopting this notion of constructiveness, we may abandon the idea of memory as reduplication or reproduction along with everything else this entails, e.g. inaccuracy, distortion, etc., since as Bartlett (1932) claims, "in a world full of constantly changing environment, literal recall is extraordinarily unimportant" (ibid: 204). The constructive adaptation of our past to present advocates for a social/context-based approach to memory, rather than as a process that takes place in isolation of other factors, and as Bartlett (1932) acknowledges, it is closely linked to consciousness: [12]

> An organism has somehow to acquire the capacity to turn round upon its own schemata and to construct them afresh. This is a crucial step […]. It is where consciousness comes in; it is what gives consciousness its most prominent function. (Ibid: 206)

Bartlett (1932) draws his theoretical insights on the basis of a series of experiments and provides a plethora of descriptions and examples.[13] Many of his experiments involve subjects perceiving a visual stimulus (e.g. a picture) and later describing it in its absence. Surprisingly, the general tendency that he reports is that participants did not provide the perceived details of what they saw in a process of constructing (with some degree of accuracy) the whole picture, but rather the contrary: participants tended to get a general impression of the whole thing (e.g. the content of the picture), and on the basis of that to construct the probable details. Consequently, he reports that since construction was mostly invented and hardly ever based on features that had been actually observed a lot of the reports were "erroneous" in the sense of recalling the actuality of the facts. Notably, in many thousands of cases of remembering, literal recall was very rare: "re-excitement of individual traces did not look to be in the least what was happening" (ibid: 206). Most remarkably, this process of recalling and describing demonstrates the way construction serves to justify the (general) impression each of the

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[12] Throughout his book, Bartlett (1932) advocates for the central role of consciousness in the mental act of remembering: "I would like to hold that this [the way we remember] too, could not occur except through the medium of consciousness" (209); "the work of the interested-determined image is also depended upon the appearance of, if we prefer to put it so, the discovery of consciousness" (211);"[t]hey, [i.e. schemata], too, are a device made possible by the appearance or discovery of consciousness and without them no genuine long-distance remembering would be possible" (214).

[13] It is important to mention that Bartlett as a true experimental psychologist was dedicated to taking a "strictly functional point of view" (xviii). This means that his main concern were the variety of conditions under which perceiving, imagining, and remembering take place. Thus, his experimental reports include numerous subjects with "diverse materials and methods in the case of every one of … [his] experimental series" (1932: 207).

participants had of the stimulus, which Bartlett (1932) calls *the attitude factor*.[14]

To summarize, Bartlett's (1932) intriguing theory of remembering emphasizes its reconstructive nature founded on the relation of our attitude towards an experienced event, not literal recall; "[remembering] is thus hardly ever really exact, even in the most rudimentary cases of rote recapitulation, and it is not at all important that it should be so" (213).

2.5. CHOICE-MAKING

2.5.1 FREE WILL & AGENCY

As stated in Chapter 1, the present thesis is not concerned with discussing different theories on (free) will such as libertarianism, compatibilism, and determinism. Nevertheless, when examining choice some references to these notions cannot be avoided. The problem of free will rests, as Searle (2010) argues, on a conflict between two well-established convictions. On the one hand stands the conviction that human actions are natural events and thus subject to natural forces, as much as for example, "human digestion and human growth along with the movement of tectonic plates and growth of seeds into plants" (ibid: 4). This implies that our decisions, choices, and actions are determined just like any other biological process. On the other hand, we have the conviction of free will as we experience it in deliberation, when we consider a variety of alternatives prior to our decisions, while knowing that we could have chosen X over Y, or Y over X.

Accordingly, the basic points of the free will debate and the focal points of the corresponding conceptual claims of different theories are (a) alternative course of actions, (b) causal agency, and (c) type of decisions (Nahmias et al. 2004). With respect to (a), the *libertarian* view holds that the agent is able to choose in a plethora of ways even if all external conditions are the same at the particular moment of choice-making. Searle (1984: 95) encourages us to reflect on the way we experience our various daily, ordinary actions:

> You will sense the possibility of alternative courses of action built into these [daily, ordinary] experiences. Raise your arm or walk across the room to take a drink of water, and you will see that at any point in the experience you have a sense of alternative courses of action open to you ... .In normal behaviour, each thing we do carries the conviction, valid or invalid, that we could be doing something else right here and now, that is, all other conditions remaining the same. This, I submit, is the source of our own unshakable conviction of our own free will.

However, *compatibilists* suggest that an agent's ability to choose otherwise presupposes a *difference* in the conditions of the particular moment of a given choice-call:

> When we think of ourselves hypothetically as having acted otherwise than we did, we always suppose a

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[14] "Attitude names a complex psychological state or process, which it is very hard to describe in more elementary psychological terms. It is […] very largely a matter or feeling, or affect. We say that it is characterized by doubt, hesitation, surprise, astonishment, confidence, dislike, repulsion and so on. Here is the significance of the fact […] that when a subject is being asked to remember, very often the first thing that emerged is something of the nature of attitude. The recall is then a construction, made largely on the basis of this attitude, and its general effect is that of justification of the attitude" (207).

difference in the antecedents: we picture ourselves having known something we did not know…or as having desired something…more or less than we did. (Mill 1865, cited in Boyle et al. 1976: 49)

Concerning (b), libertarians argue that when we deliberate, "we experience ourselves as active causes" (Nahmias et al. 2004: 167), i.e. we actively engage in our mental activities, rather than watch our decisions and choices emerging, as compatibilists claim. Contrariwise, *determinists* view the process of deliberation as an ultimately passive spectating: "we have to wait and see how we are going to decide something, and when we do decide, it bubbles up to consciousness from we know not where. We do not witness it made; we witness its arrival" (Dennett 1984: 78). Concerning the third point on the type of decisions (c), the libertarian view argues that typical experiences of free will decisions are of "close-call"; there is the possibility for an alternative course of actions under the exact same conditions, where we, as agents, value all possibilities as feasible candidates (since they weigh fairly equal to us) and consequently, "we experience closely balanced desires for either [one of them]" (Nahmias et al. 2004: 168). Inversely, compatibilists emphasize that experiences of free will involve confident choices, where our reasons for making a choice over another clearly outweigh the other alternatives, judging them after deliberation as not that adequate or desirable (Campbell 1951; O'Connor 2000).

It seems that the only way to disentangle the concept of *agency* involved in making choices is by viewing it through certain scientific prism. Even within cognitive semiotics, there are overlaps as well as differences (see for instance, the biosemiotic and enactivist approach).[15] Irrespectively of agency itself, there is the "sense" or experience of agency and, as Gallagher (2007) argues, this can be either "non-conscious", as when we engage in actions without having a plan, intrinsically linked to our bodily movements (e.g. we do not pay attention to our legs' movement as we cross the street, or our hands as we rise the glass to drink water); and reflectively conscious, when we attend to the various acts we engage in (Gallagher 2012: 20).[16]

At this point it is important to note that consciousness and even more so the notion of "non-conscious" (and its variations, e.g. "unconscious", "pre-conscious", "pre-reflective conscious", etc.) is discussed, named, and operationalized differently across fields.[17] Perhaps our most common idea of the "unconscious" is the Freudian

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[15] In biosemiotics, "choice of action" […] does not refer only to conscious choices, since agency is taken to occur in all living system. The "choices" being made refer to the (sign-based) taking of different paths among several alternatives, depending on "processing of semiosis" at any particular level of biological organization" (Tonnessen 2015: 69). In enacticism, one of the most central notions is that of autopoiesis (Maturana & Varela 1980; 1998) (i.e. the process by which a living system maintains and reproduces itself); thus, "agency is concerned with action in the world and an entity is characterized as having agency in so far as it manifests the capacity for action that is for it" (Cameron 2001: 4560). A specialized framework dealing with agency and semiotics has been proposed: agentive semiotics, which combines semiotics, phenomenology, biology and cognitive sciences (Mendoza 2016).

[16] Gallagher (2007) differentiates between the sense of agency (i.e. I am the cause or author of the movement), and the sense of ownership (i.e. I am the subject of the movement) (348); moreover, he distinguishes between agency as 1rst-order experience, i.e. pre-reflective and minimal, and as a 2nd-order experience, i.e. reflective.

[17] It is worth mentioning that even as recently as (nearly) the 1990's, consciousness was "formally" defined in The International Dictionary of Psychology as an "elusive phenomenon": "It is impossible to specify what it is, what it does, or why it evolved. Nothing worth reading has been written about it" (Stuart Sutherland 1989). However since then, starting off with Crick and Koch's (1990) announcement that "the time is now ripe for an attack on the neural basis of consciousness" (263), consciousness started to gain its place back as a respectable scientific field of study (Zlatev 2008). Currently, phenomenology and scientific research is experiencing a rapprochement in the study of consciousness (Lutz & Thompson 2003) and cognition (Gallagher 2005), though the notion of consciousness still remains "polysemous–if not ambiguous" (Zlatev 2008: 37).

sense where it is opposed to consciousness: "we have no right to extend the meaning of this word so far as to make it include a consciousness of which its owner himself is not aware" (Freud 2008: 36). However, this conception is antithetical to the phenomenological idea of consciousness. According to Husserl (1991: 123) "consciousness is necessarily consciousness in each of its phases" understood in the most broad sense to embrace all aspects of our mental life, i.e. both the explicit and implicit phenomena of our awareness;[18] moreover, in Husserl's (1991: 115) view "self-consciousness cannot be restricted only to the narrow scope of attentive or alert awareness, but must include in itself equally all background, obscure conscious experiences". Husserl's approach implies that we are always more or less conscious and that even those parts that are obscure to us are still fundamental aspects of our conscious experience.

The "unconscious" manifests itself as an important, but yet "altered form of consciousness and a depth structure of subjectivity" (Zahavi 1999: 207). This approach suggests that our experience is not limited to its intentional acts (e.g. the things that present themselves to us in direct perception or presentified to us through remembering and imagining), but contains all aspects of our embodied existence, even if they seem to lack an explicit character.[19] This implies that subjectivity operates in a multidimensional manner, allowing an "opening to the past" (Merleau-Ponty 2012: 413).

2.5.2 TWO-LEVELS OF CHOICE AND VERACITY

As it has been discussed so far, the phenomenological approach to experience distances itself from a purely psychological or biological conception, aiming to elucidate "meaning/intentionality [through our] bidirectional relation" (Zlatev 2018: 2) to the world. From this standpoint, we are not behind (or outside) our various mental acts (i.e. choices, memories, etc.), but rather we are our acts. Accordingly, for choice-making two central kinds of consciousness need to be acknowledged, corresponding to two different types of memory (as discussed in Section 2.4.2), and forming a two-level hierarchy of choice-making:[20]

∞ *Operative intentionality*: the (lower) level of pre-reflective consciousness that establishes "a natural, pre-predicative unity of our being in the world and of our life […] that appears in our desires, our evaluations, and our landscape more clearly than it does in objective knowledge" (Merleau-Ponty 2012: 1xxxii). It is the source of our more rapid and intuitive choices, and correlates with the implicit form of body-memory.[21]

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[18] "I can live more things that I can represent to myself, my being is not reduced to what of myself explicitly appear to me" (Merleau-Ponty 2012: 310).

[19] Perhaps de Warren's (2010) metaphor of sleep "as the way that consciousness constitutes itself as the absence of itself" (cited in Kozyreva 2016: 203) is a fairly good analogy.

[20] It should be noted that Zlatev (2018) includes *operative intentionality* in level-based analyses of meaning-making (i.e. life, subjectivity, intersubjectivity, sign function, and language), where to each level "corresponds a dialectics of spontaneity and sedimentation, with corresponding normative structures (e.g., habits, emotions, conventions, signs and grammar) … emerging from and constraining, but not determining, subject-world interactions" (ibid: abstract).

[21] Another definition is provided by Reuter (1999: 72) who describes operative intentionality as "the body-subject's concrete, spatial and pre-reflective directedness towards the living world".

∞ *Categorial intuition*: the (higher) level of reflective consciousness (of act-intentionality) that gives the basis for a predicative, but still pre-linguistic choice based on "our judgments and […] voluntary decisions" (ibid). It provides the foundation of reason and thought, while generating our slower and more deliberate intentional acts.

Operative intentionality is a form of (bodily) awareness that occurs simultaneously and "passively" as we perceive objects (Lutz & Thomson 2003). It comes before reflection and the forming of beliefs, reaching the place where our impressions and impulses reside, and making it the source of our more spontaneous choices. The key in approaching and understanding operative intentionality is our living body, our embodied self: we are placed in the world, which we perceive and make sense of with our body. Through this bidirectional interaction (body/world and world/body) we constitute both our self and the world, "we crease the world, we intervene and change the way things are" (Sokolowski 2008: 257).[22] This kind of bodily intentionality is manifested not only explicitly in the things that are perceived, but also in an implicit manner "surrounded with references to the past and future, to other places and other things, to human possibilities and situations" (Baldwin 2004: 10). Hence, it comes before our explicit awareness, but is still part of our consciousness since it is generated from our natural directedness to the world:

> There is, therefore, another subject beneath me, for whom a world exists before I am here, and who marks out my place in it. This captive or natural spirit is my body, not that momentary body which is the instrument of my personal choices and which fastens upon this or that world, but the system of anonymous "functions" which draw every particular focus into a general project. (Merleau-Ponty 2002: 296)

Our experience (of ourselves and the world) is layered in an (inter)depended manner where our present experience rests on our past experience (and actions) through a process of sedimentation. "Sedimentation is crucial in the genesis of intentionality and functions as a horizon for all present experience […] [that] becomes reawakened in the individual acts" (Føllesdal 2004: abstract). The sedimented structures in our body (schema) are "revealed" in our various acts, which express "our power of dilating our being-in-the-word, or changing our existence by appropriating fresh instruments" (ibid: 166). However, these habits are by no means automatic and mechanical, since they reflect a level of normativity and intentionality (Zlatev 2018). No matter the forces under which we make a choice over another (spontaneous or reflective), our "doing" is what matters most and not so much the reasons we provide to support it – to our self or to others – since through our actions we manifest ourselves: "the unity of what is being done is compatible with a multicity of personal reasons why one is doing it […]. The bodily action crystallizes both the ends and the purposes just as the verbal sound crystallized and materializes the intelligibility of what we talk about" (Sokolowski 1990: 261-262).

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[22] "The body constitutes the world according to sedimented structures but it is equally true that those structures are themselves acquired in the body's encounter with the world" (Nordlander 2011: 56).

When we lift ourselves over the level of operative intentionality to act-intentionality, we reach *categorial intuition*, where objects and the various ways they are manifested can be explicitly asserted. By "categorial" (intentionality, registration, speech, etc.) Husserl refers to the kind of thinking and experience that goes beyond simple perception to making judgments. Categorial intuition is a two-order achievement, since it carries both the registration of the features of an object, as well as the articulation of those features that ultimately synthesize (the presentation of) the object's new identity. To make this claim more explicit, we may recall the example of Mona Lisa smiling enigmatically:[23] what we have present to us is Mona Lisa's face, the enigmatic smile of this face, and the tight relationship of the smile belonging to the face. On the first-order, we perceive (a picture of) a smiling woman. On the second-order, we distinguish the smile itself as a "feature" and judge it as enigmatic or otherwise. Categoriality is the level on which we turn from operative intentionality and simple perception to explicit "features" which serve as the basis for deliberate choices that we can contemplate and reflect upon. Categorial thinking provides us with the reasons we put forth when we choose X over Y; it "monitors" our (operative) intentionalities, forms categories, and gradually allows us to put words to our actions. It generates ideas that are registered, conducted rationally, and explicated with language.

We may thus conclude that the choices we make are "products" of the combination of operative intentionality and categoriality, with both levels requiring attention: in the former, our attention is somewhat diffused, while in the latter it is directed and focused towards specific features. While we are not deterministic machines even on the first level, it is the second that makes us fully free agents, as suggested by Zlatev (2018: 17):

> While affective/emotional motivation operates already on bodily movements, where we are more or less "automatically" drawn to what is attractive, and repelled by what is repelling, with primary subjectivity and even more so with reflective consciousness, we become increasingly free in our choices.

According to this two-level analysis of choice, when we make a choice, we perform an act motivated by a plethora of reasons, some of which might be very obscure even to ourselves. Operative intentionality is like a tunnel starting off from the implicit obscure part of our experience to the explicit expression and manifestation of it with our categorial reasoning. We drive through the topography of our actions with the wheels of our operative intentionalities, directing them with the steering wheel of categoriality. In this journey, we might take "wrong" turns, but this does not make the journey any less true, since our acts are ours (in all the various ways they are manifested) and we are our acts. Through this bidirectional relation we demonstrate ourselves as "agents of truth" (Sokolowski 1990, 2000, 2008).

The term "agent of truth" expands from the plain notion of "(rational) human being" to encompass a wider range of understanding (even those that come before categoriality) and implies that "attaining truth is an accomplishment and not a passive reception […]: the human person is defined by being engaged in truth and

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[23] My example might be an oversimplified one, since it depicts a "concrete" feature to an actual object, but of course "the various layers of sensuous presence and categoriality may be more vividly differentiated" (Sokolowski 1981: 132) as illustrated in more abstract examples, such as "the sudden awareness that […] he is acting enviously, that there is a scent of hostility in someone's behaviour towards me" (ibid: 132). In these cases, "we imagine a kind of sensuous initial awareness first, in which a feature begins to call attention to itself, which is then succeeded by the more decisive declarations, categorically formed, with all the public effects that they have, that he is truly envious, that this person has become antagonistic" (132).

human action is based on truth" (Sokolowski 2008: 15). Notably, the term "truth" is here not used as in a logical or moral sense, but rather in the broader sense of *veracity* to designate our "human inclination to attain the truth of things" (ibid: 20):

> Veracity is the impulse toward truth, and the virtue of truthfulness is its proper cultivation. Veracity is the origin of both truthfulness and *the various ways of failing to be truthful.* Thus, lying, refusing to look at important facts, being careless or hasty in finding things out, and other ways of avoiding truth are perversions of veracity, but *they are exercises of it.* (Ibid: 20, my emphasis)

It should be noted that this is not a "bizarre" notion restricted only to phenomenology. On the contrary, we can note it by starting off from our own experiences when we think of how we normally interact with other people.[24] We may also draw on Spinoza (1677) who proposed that all ideas are accepted as true before their validity is being rationally assessed (ibid: 96-101). It is also reflected in mainstream cognitive science. For example, Gilbert (1991) argues that prior to any act of understanding comes our inclination to believe and that this holds true even for nonsensical statements. Research in different areas, such as those of attribution, persuasion, and lie detection has reported that people are particularly inclined to believe what others tell them (Jones 1979; Zuckerman et al. 1981; Petty & Cacioppo 1986). Psycholinguistic research has shown that people are generally quicker to assess the validity of true rather than false affirmative sentences (e.g. Gough 1965, 1966; Trabasso et al. 1971; Carpenter & Just 1975;). It seems thus that veracity runs inside us in a way that elevates the sense of human rationality into the passionate mode of seeking the truth, making us active agents of truth, despite of, or perhaps due to all of our omissions, failings, oversights, and errors, since they are just equal manifestations of our experience (Brooke 1986).

2.6. "CHOICE BLINDNESS"

As stated in Chapter 1, cognitive scientists use the term "blindness" for cases when participants fail to detect a manipulation of some kind: for example, in "change blindness" experiments, there is a change in the scene that is not detected when the attention of the subjects is drawn to other aspects.[25] Lately, the term "memory blindness" (Cochran et al. 2016) is used to refer to "false" eyewitness recollection. In so-called *"choice blindness"* (hence, CB), most relevant for the present thesis, participants tend not to notice inconsistencies between a choice they made and the alternative that they are asked to justify. Such experiments in a variety of domains have reported relatively high "blindness" rates for preferences of different nature (e.g. political, moral, decision making) (Hall et al. 2010, 2012, 2013; Mc Laughlin & Somerville 2013) in different modalities (e.g. vision, voice, taste and smell, etc.) (Hall et al. 2010; Steenfeldt & Thornton 2013; Sauerland et al. 2013). Recently, the focus has been on memory, but such research is still very limited (Stille et al. 2017) and mostly studied in regards to eyewitnesses (Sagana et

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[24] Even in trivial interactions as when we run errands or do shopping, this form of financial transaction is based on the belief and good will that we will take our groceries whether we first hand over our cash, or vice versa.

[25] "An observer is initially shown a stimulus…a change of some kind is made to this stimulus…and the response of the observer is then measured" (Rensink 2002: 251).

al. 2013; Cochran et al. 2016; Stille et al. 2017) and autobiographic recollections (Sauerland et al. 2013). Research has also examined possible explanations of the "blindness" effects for both change and choice, but "the mechanisms behind [these] effects have not yet been universally agreed upon" (Simons 2000, cited in Johansson et al. 2008: 142).[26] Below, I review some of these findings, before discussing them and proposing an alternative study, in line with the phenomenological approach discussed in the previous sections.

The initial CB experiment (Johansson et al. 2005) was inspired from "change blindness", but shifted the emphasis on the effects visual changes might have on our intentions and preferences. Hence, the critical focus was on choice in relationship to awareness and introspection (Johansson et al. 2008), and as such it involved a choice-task based on preference. Participants were assigned to choose from a set of 15 pictures-pairs of female faces the one they found more attractive, while manipulating 3 of them (i.e. substituting the chosen picture with the non-chosen one), as shown in Figure 1. Participants had to orally motivate their "choices" for both the 3 manipulated pictures and 3 of the non-manipulated ones. As factors for the experiment, deliberation time in three conditions (2s, 5s, free deliberation time) and similarity of the face-pairs in two conditions (high similarity and low similarity) were considered, but without finding significant effects. The results showed 1) that participants often failed to notice the switch of their actual choice to the one they were presented with (74%); and 2) that they "confabulated" arguments to support choices they had never made, exhibiting the same (high) degree of confidence and homogeneity for both types of reports (manipulated and non-manipulated).[27] After the experiment, a debriefing session took place where participants were interviewed to check retrospectively for detected manipulations, while they were informed of the true nature of the experiment.
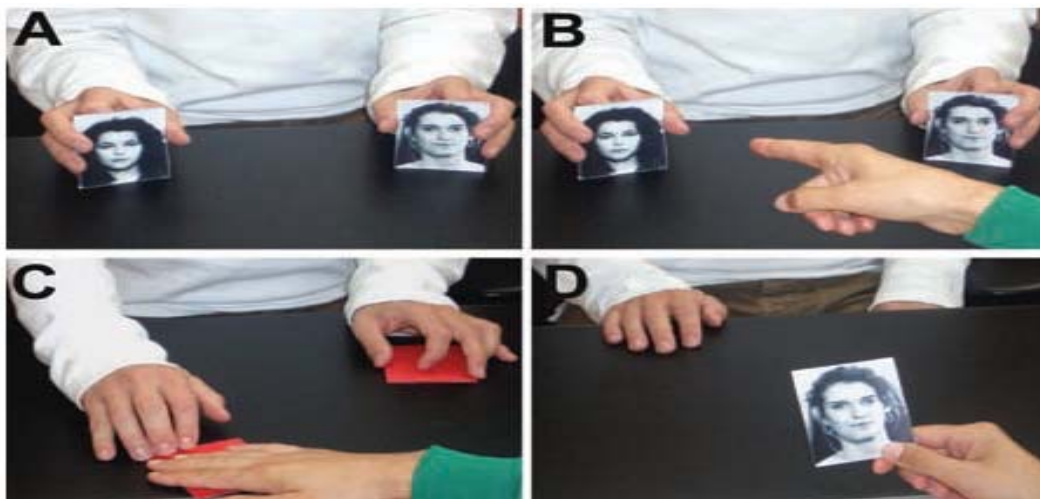
Figure 1. The choice blindness procedure (from Johansson et al. 2005)

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[26] For change blindness some explanations involve the false conception of our own visual experiences (Blackmore 2002), or the failure to "represent" the world in detail, focusing our attention on the most important features (Brooks 1991); for choice blindness, previous research dealt with manipulated stimuli (Sauerland et al., 2013), compliance (Johansson et al., 2008; Sauerland et al., 2013), and suggestibility (Merckelbach et al., 2011; Sauerland et al., 2013), without sufficiently explaining "blindness" effects.

[27] According to Nisbett and Wilson (1977), "confabulation" is used to refer to the explanation participants' gave for their behaviours with reference to factors known by the experimenters to be insignificant or irrelevant, while failing to report factors that were essential: "such reports are often based on a priori theories about behaviour–were they cultural, personal, or both– drawing the conclusion that people *do not have actual introspective awareness*" (233).

The findings from this, and related studies, are presented as evidence for a "robust phenomenon [used] as a general research tool to study decision making, intentional action, [and] introspection" (Johansson et al. 2008: 151). Its bases are the two recurring points: the low detection rates of manipulation, and the similarity between the reports of manipulated and non-manipulated groups.[28] Resting on these observations, CB researchers draw a strong conclusion:

> […] our experimental results clearly support an anti-introspectionist view. If we are supposed to know our own minds from the inside, we should know why we do what we do. And when asked to describe why we chose a face we in reality did not prefer, we are not supposed to just fabricate reasons (at least not without knowing that this is what we are doing). In our experiments, it is evident that the participants do not have *perfect access* to their underlying cognitive machinery. (Ibid 20, my emphasis)

The particular quote is selected not only because it overtly echoes the anti-introspectionist standpoint that CB researchers take, but also because it indicates the effort to validate a tendency as a general phenomenon based on a number of features, which are at least problematic. First, the assertion that participants lacked "perfect access" to their cognition seems to be a straw-man argument, since it refutes a claim that no one really makes (see Lutz & Thompson 2003; Prinz 2003). Second, the low rates of detection exhibit a recurring tendency to be "blind" to manipulation, but they also show that this "blindness" is not a unitary phenomenon: in all experiments, many people accept the manipulation, but many participants also resist it. This entails that certain factors are able to influence some people under particular conditions more than others and we need to know how different degrees of choice awareness can be due to the effect of a variety of factors (e.g. experimental conditions, topic of research, way of manipulation, individual characteristics, etc.). Third, the observation of homogeneity between non-manipulated and manipulated choices does not necessarily indicate that differences could still not exist, since as well known "the absence of evidence is not evidence of absence" (Rees 1973).[29] Further, when Lind (2006) investigated the properties of the introspective reports of the main CB experiment (Johansson et al. 2005) with focus on markers of uncertainty, there were some differences between manipulated and non-manipulated reports, at least as tendencies.

Since the point of focus in this thesis is our awareness of choice and the role that memory plays in it, some previous results on CB involving memory need to be reviewed. Johansson's et al. (2005) report a series of three experiments that were piloted, employing a different medium (computer screen), different types of stimuli (female faces and abstract figures), and a different design (including a post-test memory task and a rating task of

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[28] For the original experiment (Johansson et al. 2005) the criteria of similarity were that of *emotionality*, i.e. how emotionally engaged participants were with their reports; *specificity*, i.e. how specific participants were with their reports; and *certainty*, i.e. how sure they were about the choice they made.

[29] The citation was attributed to Martin Rees in a symposium on extraterrestrial intelligence, *Life Beyond Earth and the Mind of Man*, edited by Richard Berendzen, although it has been used in several variations before him (Morris 2014).

both chosen and non-chosen pictures) (Johansson et al. 2008).[30] For all three experiments, the majority of the manipulations remained unnoticed, but the highest rate of detection (39%) took place under the rating task. In regards to memory, reports varied when comparing manipulated and non-manipulated trials, while the general tendencies were that 1) participants remembered their initial choice more for the non-manipulated trials, and that 2) for the manipulated choices, participants often remembered the manipulated choice as their genuine choice. Likewise, Stille's et al. (2017) results on eye-witness recollections, combining CB and the "misinformation effect",[31] as well as Cochran's (2016) study on eye-witness memory are in accord with Johansson's et al. (2008) results: when participants were exposed to the manipulated versions their recollections were changed accordingly. Lastly, Sagana et al. (2014) focused on the cognitive mechanisms behind "blindness" occurrence, testing whether memory "distortion" explains it. Their results did not show differences in participants' ability to remember their original choice (sympathy ratings on female faces) for both manipulated and non-manipulated trials, i.e. 46.2% and 45.8%, respectively, arguing that "memory impairment does not fully account for blindness phenomena" (ibid: 1). Nonetheless, antithetical to previous research, they report that participants did not appear to adopt the manipulated version as their genuine choice and were much more often consistent with their original rating rather than with the manipulated one (i.e. across 246 manipulated trials, only in 2.7% of the trials the manipulated choice was adopted, while 46.6 % were consisted with their original choice; in the remaining 50.8%, participants were inconsistent with both the manipulated outcome and the original rating). One of the most significant contributions of this research is that it shows that even though participants are often "blind" towards manipulation, they are able to recall their original choices when they were informed that manipulation was involved in the task.

Thus, previous research in CB shows diverse findings. For instance, when Sagana et al. (2013) applied the CB paradigm on eye-witness recognition of faces, they report "blindness" on 41% of the manipulated items, while in a follow-up study the same researchers (Sagana et al. 2014) state these effects ranged from 0% to 6%.[32] Similarly, in eyewitness recollection, Cochran et al. (2016) report that participants changed their reports between two experimental trials adopting the manipulated choices as their own, but the authors could not draw conclusions on whether the alteration between the recollection of the two trials was due to CB or "the mere exposure to a manipulation that gave this change […] [due to the use of] "a non-stringent way of measuring detection, as the authors themselves contend" (Stille et al. 2017: 3). Further, the way of measuring detection though explicit comments could be problematic: "[f]uture research on choice blindness should investigate other, perhaps more implicit methods of measuring detection" (Fazio & Olson, 2003). In other research, not limited to memory involving "external" experiences such as recollections of faces, etc., CB effects were nearly absent:

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[30] The post-test task was included to measure "if the original choice or the manipulated outcome would be remembered as the preferred picture; [rating was included to secure] that the manipulated item was fully processed after the manipulation" (Johansson et al. 2008: 146/149).

[31] This refers to the impairment in memory for the past that arises after exposure to misleading information

[32] In Sagana et al. 2013 participants picked out two pretend tourists they had briefly spoken to. One of their choices was manipulated; in Sagana et al. 2014, participants first witnessed mock-crimes on film and then picked out people from a photo line up, whom were involved in the crimes, some of which were later manipulated.

Sauerland et al. (2013) checked participants' *individual memories* on norm violations through a questionnaire, where some of the answers were manipulated. Interestingly, in 90% of the cases, manipulation was detected.

As pointed out earlier and consistent with at least some of these findings, the fact that we are often able to remember our initial choices after manipulation suggests that we do not *in general* adopt the manipulated choice as our original one. The findings of Sagana et al. (2014) show that we are (to certain extent) aware of our choices. Accordingly, the nearly absent effect of "blindness" for autobiographic memories of Sauerland et al. (2013) clearly indicates that different kinds of cognitive processes allow different degrees of conscious awareness, and that for memories that are drawn from our lived past (and not as the outcome of a forced-choice task), participants are seldom susceptive to manipulation. Further, the diversity of the results in CB studies, even when conducted by the same researchers on similar topic areas, clearly indicates that the methodological approaches taken across different studies (e.g. "type of decision, manner of manipulation, ways of measuring detection, and other experimental variables") (Cochran et al. 2016: 2) need to be taken into account, as acknowledged by the original CB authors:

> From a common sense perspective, it seems like these factors [e.g. consequences for choice, concreteness of the choice task] would influence both detection rate and memory of initial choice, but it remains to be empirically decided. (Johansson et al. 2008: 153)

Since various kinds of conditions may influence differently manipulation detection, it is only reasonable to check what criteria were considered by the original CB experiments. Firstly, it should be noted that these experiments are described in the literature as "simple choice task[s] in combination with a covert manipulation of the *outcome* of the choices made" (Johansson et al. 2008), which do not aim for a high level of monitoring on participants' behalf:

> Of course, any attempt at an ecological explanation of decision making would have to accommodate both non-vigilant (relaxed, non-suspicious), as well as vigilant (guarded, suspicious) choice […] Had our experiment been framed as an explicit detection task, we have no doubt that most participants would have been able to spot the manipulations immediately. (150)

However, not framing the experiment as an "explicit detection task" (ibid: 150) is different from designing the overall experimental procedure so as to minimize any potentials of detecting the manipulation. For example, in the study of Johansson's et al. (2008), participants were first instructed to handle the task as "rapid and intuitive", implying that there is no need for deliberation; then, participants were subject to 10 practice trials, exhausting their attention before taking the actual task that consisted of altogether 15 trials. Finally, when all choice-trials were completed, the participants were subjected to an *unannounced* memory test, where they had to look at the pairs again and try to remember their choice. It is possible that when many of such complicating factors are combined in the design of a single experiment, the detection of manipulation is more likely to be negatively influenced.

The current thesis' experiment employs in its experimental design similar factors to those of Johansson et al. (2008) series of CB experiments, but altering its overall phases and instructions, aiming to limit the manipulation to the actual outcome of participants' choices, and to ensure the most ethical conditions possible to allow for a choice-manipulation task to take place (see Chapter 3, Section 3.2.5). Thus, besides memory, the factors this thesis employs are consequence and affectivity based on two tasks (more/less consequential) and two types of stimuli (human faces /abstract figures – in the form of inkblots).

Consequence is relevant, since we tend to be more invested with choices of greater impact – in regards to time, money, commitment, etc. (e.g. what house will we buy or who to marry) – and less with those that influence us superficially (e.g. what movie we will watch or what we will have for dinner) (e.g. Iyengar 2017).[33] So, for the more consequential choice task (i.e. long term involvement) participants may be expected to reflect more on the alternatives and set their personal (significant) criteria on making the most adequate choice, ultimately enhancing their way of remembering them and detecting manipulation, even if consequences could only be imagined and not actually experienced. Likewise, affectivity is acknowledged to be a crucial factor to memory (e.g. Brown 1994; Derouesne 2000; Zaborowski 2018) and faces can be expected to be more affect-arousing than inkblots. Furthermore, the pictures of human faces and abstract figures also differ in terms of *pictoriality*,[34] which can also be expected to make the choices of faces more memorable and manipulations of such choices more detectable. However, it should be noted that affectivity and pictoriality are separate factors that are inevitably combined in the experiment, since the human faces' stimulus "carries" both.

To recapitulate, the lack of a sufficient explanation of CB, the unclear and inconsistent connection between the CB and memory, and the fact that various factors throughout research seem to influence differently "blindness" occurrences intensify the motivation for and relevance of the present investigation. If factors such as those adopted in the present thesis (i.e. memory, consequence for choice, affectivity) are able to influence participants' detection of manipulation and thus testify to various degrees of choice awareness, then the conclusion that we are in general "blind" to our choices can be questioned.

2.7. MANIPULATION BLINDNESS

The critical review of the CB studies in the previous section, along with the phenomenological analysis of choice-making in Section 2.5, leads us to propose a terminological revision: what we can say concerning the cases where participants do not notice that they are presented with a choice that they have not made is not that they have been "blind" when making the original choice (on either the level of operative or categorial intentionality), but that they simply do not notice (or at least object) when an alternative is substituted for their choice. Thus, at most, we can call this "manipulation blindness".

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[33] "In order for people to understand the differences between choices, they have to be able to understand the consequences associated with each choice. […]. The consequences need to be felt in a vivid sort of way."

[34] Pictorial consciousness, according to Husserl (1980), involves distinguishing between "the picture thing" (the physical picture), "the picture object" (what the picture depicts) and the "picture subject" (the referent in the world. The triadic relation of the picture sign was developed further by Sonesson by distinguishing picture subject (the picture object with its "lifeworld colors") and picture referent (see, Sonesson 1989, 2006, 2008, 2012, 2013).

According to the CB approach, when participants perceive two alternatives and are asked to make a (forced) choice, they are expected to recall the choice made, reject the one they did not make, and provide adequate justification. The process of choice-making itself is seen as a rather passive event during which participants are regarded as distinct spectators rather than as active agents, and in their effort to make sense of their actions they "fabricate reasons" (Johansson 2006: 20). This is the interpretation that results in the notion of CB.

> By setting up this mismatch between what … [the participants] wanted and what they received, we now have a way of demonstrating when experimental *participants are manifestly wrong about themselves.* And as such, it is a novel tool in research on self-knowledge. And in addition, it is also a way to show both to ourselves and to others that we do not know as much about ourselves as we think we did. (Johansson 2006: 39, my emphasis)

On the other hand, the notion of manipulation blindness is neutral with respect to the degree of conscious awareness in choice-making, and does not prejudge that "we do not know as much about ourselves as we think we did" (ibid). I return to the matter of our self-understanding in Chapter 5, after first presenting the design and results of the empirical study.

2.8. SUMMARY & GENERAL HYPOTHESES

This chapter presented the theoretical background for the understanding of remembering and the phenomenon of choice in a phenomenological approach, and of cases where we may speak of "blindness" not so much concerning the choice itself, but of various manipulations of our choices. First, an introduction of the framework of cognitive semiotics and its methods (Section 2.2) was presented. Following, the ways in which various kinds of objects are intended were discussed (Section 2.3), focusing on the intentional acts of perception and remembering (Section 2.4). After that, the phenomenon of choice, as well the proposed two-level hierarchy of choice-making were presented (Section 2.5), where each level corresponds to choices of different nature: operative intentionality to more rapid, pre-reflective choices, and categorial intuition to slower and more reflective ones. Lastly, the focus was drawn to the construct of CB and a review of previous studies (Section 2.6), followed by the explication of the term "manipulation blindness" (Section 2.7).

Generated by the theoretical framework as it was discussed in detail and the research questions that were stated in Chapter 1, the following general hypotheses may be formulated to address the current empirical study of choice awareness and manipulation blindness:

o Memory for choice plays a significant role in manipulation blindness, and there will be higher detection rates of the manipulations for the remembered choices and lower for the non-remembered ones.

o Consequence of choice influences memory (our way of remembering our choices), and thus there will be higher detection rates of the manipulations for the more consequential choices and lower for the less consequential ones.

o   Affectivity influences memory, and thus there must be higher detection rates of the manipulations for the choices with higher affective valence and lower for those with lower affective valence.

The discussion of different factors that affect memory and "blindness" phenomena suggest that the hypotheses should not be regarded as mutually exclusive. Rather, the extent to which each is found to be supported will be indicative of the relative impact of the different factors in our (self) awareness of choice and memory.

· C H A P T E R   3 ·

> The supposedly immaterial soul, we now know, can be bisected with a knife, altered by chemicals, started or stopped by electricity, and extinguished by a sharp blow or by insufficient oxygen.
>
> Steven Pinker

> Since we are more than a bunch of neurons, one requires good methods that will allow us to sort out what the "more" is.
>
> Shaun Gallagher & Daniel Schmicking

3.   METHODS

3.1. INTRODUCTION

This chapter presents how the empirical study was designed, and how data were generated, coded, and evaluated, in line with the methodological triangulation of cognitive semiotics (as it was defined in Chapter 2, Section 2.2.). The goal of the study was to investigate the role of memory (along with the factors consequence of choice and affective valence) and its impact on choice awareness and manipulation blindness. Thus, given the theoretical background and general hypotheses presented in the previous chapter, at the end of this chapter, the detailed hypotheses are stated, providing the basis on which the results are assessed in the following chapter.

3.2 DESIGN

For the purpose of the current investigation, a forced-choice experiment of preference that consisted of two tasks was designed. Participants were divided into two main groups, and each group was assigned two tasks. The tasks combined the assignment of choices with 1) a different degree of *choice-consequence* (more/less consequential) based on different task instructions; and 2) a different degree of *affectivity* (high/low affective valence) and *pictoriality*, based on stimuli with different degree of abstractness.

3.2.1 STIMULI

Two different types of stimuli were selected for the two choice tasks: pictures depicting human faces and abstract figures in the form of inkblots. As discussed in Section 2.6, the use of qualitatively different types of stimuli secures differences in the type of selectivity (in relation to, for example, participants' cognitive and affective predispositions) (Bartlett 1932) and pictoriality (Husserl 1980). Further, both kinds of stimuli have already been used extensively in similar studies: CB experiments have employed photographs of human faces as stimuli and abstract figures (of some kind) numerous times, while psychological studies of various kinds, as well as studies in imagining and consciousness have broadly employed inkblots (e.g. Dearborn 1898; Bartlett 1932; Goldstein & Hersen 2000). Thus, the use of stimuli similar to those in previous CB experiments may allow easier comparison with other studies and approaches.

The pictures of human faces were collected from the Psychological Image Collection at Stirling (PICS),

online face database (www.pics.psych.stir.ac.uk). The pictures of the inkblot figures were collected from several online sites. For each type of stimulus, 40 pictures were selected, creating 20 pairs (included in Appendix I). The pictures were chosen in a way to ensure a considerable degree of similarity within each pair, and variation between pairs. Within the main CB experiment (Johansson et al. 2005), the conditions of low-similarity and high-similarity were not shown to affect "blindness" rates. Thus, the matching of similarity in this thesis' experiment was not estimated on the basis of quantitative grounds, but rather on qualitative factors that concerned both the characteristics of the physical pictures, e.g. their size, printing quality, material, etc., as well as the characteristics of the "picture object", i.e. what the picture depicts (see 34, Chapter 2). For the latter, I took under considerations both technical aspects such as background luminance, color density, distance of the shot, position in the photo-frame, etc., as well as the distinct characteristics of the depicted object. For the human faces, these were face shape, facial characteristics (size and shape), hair length, type and color, any special features (glasses, beard, etc.). For the inkblots, the criteria considered were the shape of the figure, height, width, density, and the figure's resemblance to some physical object. For example, a figure that looked like a butterfly was matched equally to a figure where its shape was alluding to a butterfly. For both kinds of stimuli, grey scale pictures were selected and printed out on cardboards cards, with measurements 9X6 cm each. Examples of a picture-pair of each kind of stimulus are shown in Figure 2.

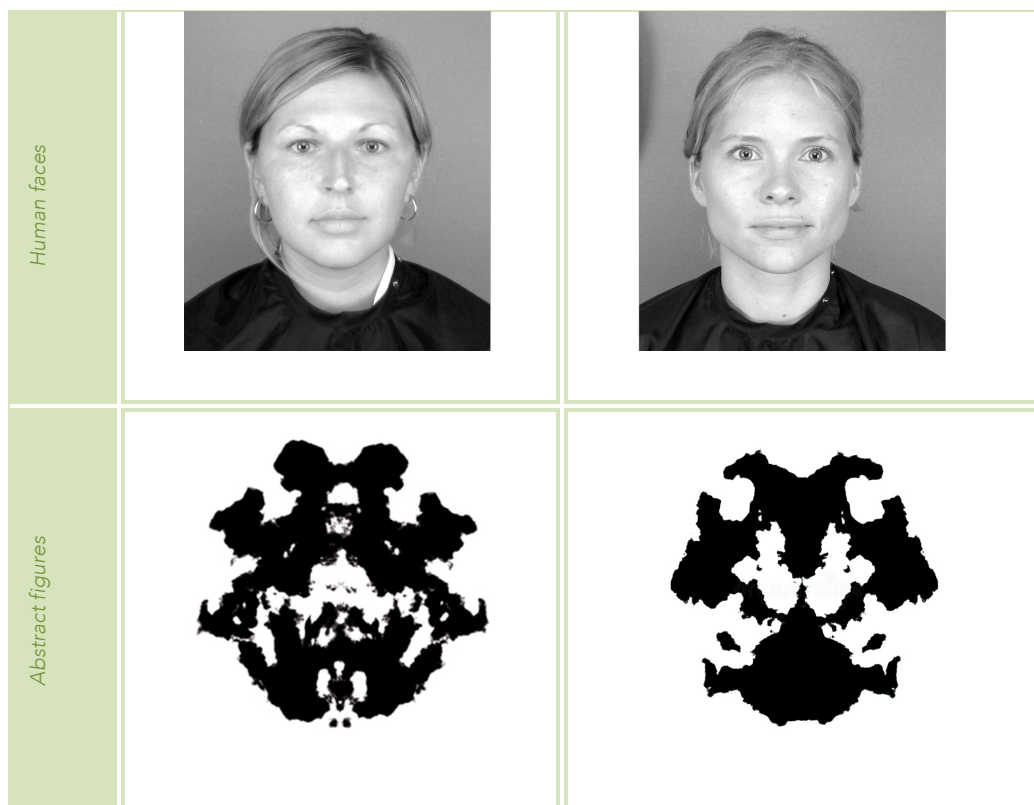Figure 2. Sample of picture-pairs per type of stimulus

3.2.2 PARTICIPANTS

Forty-three adults, native speakers of Greek (17 male and 26 female, with mean age 36 years) participated in the study, drawn from a non-student population. The choice of native language was due to this being the native language of the experimenter (myself), as social interactions by native speakers of the same language can be

expected to be more relaxed than if one or both participants used a second language (e.g. MacIntyre et al. 1997; Luna et al. 2008; Dewaele & Nakano 2012). Two of the participants were excluded from the study: the first, due to a mix up with the cards while carrying out the task, and the second, due to disturbances that could have influenced the participant's focus and performance. Participants were recruited via personal contacts in the wider region of Pieria in Greece and Skåne in Sweden in order to secure a sufficient number of subjects. They were told that the experimenter was interested in the process of choice-making and remembering. The participants were divided evenly in two main groups, roughly balanced for age and gender, for the sake of presenting the different conditions, and the order between them (see below). No participant had ever participated in previous research involving any kind of choice (manipulation) blindness. No other factors were controlled for the selection of the participants and the formation of the groups.

3.2.3 ETHICAL CONSIDERATIONS

Prior to the experiment, participants were asked to give their consent in writing, using the form given in Appendix II. Participants were notified that they would be video-recorded and that they had the possibility to withdraw from the experiment at any time. After the experiment, participants were debriefed about the true nature of the experiment's design and were given the opportunity to voice any concerns. As a reward for their participation, they received a thank-you note (included in Appendix III), the ethical satisfaction that they had contributed to a scientific experiment for a Master's thesis at Lund University, and information on their individual performances on memory and manipulation blindness that many participants found rewarding.

3.2.4 SETUP

The experiments were conducted in Greece and Sweden in the regions of Pieria and Skåne during the months June-August, 2018. Similar conditions were secured for all locations: a room with a suitable table. A video camera, a camera tripod, two laptops and a set of headphones were included in the equipment used for the experiment. Most often the recordings took place in either the participants' or the experimenter's apartment. I assumed the role of experimenter.

3.2.5 PROCEDURE

The two groups of participants were assigned a different version of the choice task. One group was asked to choose among a pair of photographs of human faces the one they found more attractive (*less consequential choice/high affectivity*) and between a pair of abstract figures the one they would pick if they were to get an ink tattoo (*more consequential choice/low affectivity*). The other group of participants was asked to choose between a pair of human faces the one they would choose to be with on a deserted island (*more consequential choice/high affectivity*) and between a pair of abstract figures the one they found more aesthetically pleasing (*less consequential choice/low affectivity*). In order to minimize influence from the sequence of presentation of the tasks (tiredness, familiarity with the task, etc.), each of the two main groups was sub-divided into two, altering the order in which the two tasks were presented for each subgroup. Table 1 illustrates the tasks and conditions of the experiment.

Table 1. Tasks and conditions of the experiment

TASKS/ STIMULI	GROUP 1	GROUP 2
	1(a)	**2(a)**
Task 1 *Human faces*	Condition: Less Consequential + High Affectivity "Who do you find more attractive?"	Condition: More Consequential + High Affectivity "If you were to be on a deserted island and could only take one person with you, who would you choose?
Task 2 *Abstract figures*	Condition: More Consequential + Low Affectivity "If you were to get an ink tattoo, which of the figures would you choose?"	Condition: Less Consequential + Low affectivity "Which figure do you find more aesthetically pleasing?"
	1(b)	**2(b)**
Task 1 *Abstract figures*	Condition: More Consequential + Low Affectivity "If you were to get an ink tattoo, which of the figures would you choose?	Condition: Less Consequential + Low affectivity "Which figure do you find more aesthetically pleasing?"
Task 2 *Human faces*	Condition: Less Consequential + High Affectivity "Who do you find more attractive?"	Condition: More Consequential + High Affectivity "If you were to be on a deserted island and could only take one person with you, who would you choose?

Participants were informed that they would participate in a choice task based on individual preferences. The written instructions (included in Appendix IV) were handed over to them along with the informed consent form. Basic points of the task were repeated orally: they were reminded that this was not a test with right and wrong answers, but a task aiming to survey how we make choices and remember them, and that precisely because of this, they were allowed and even encouraged to talk during the procedure. Further, they were informed that they could take as much time as needed, although the overall procedure was estimated to last between 30 and 60 minutes (including, if they wanted, a short break between the first and the second task). Finally, they were told that they would get information on their performance at the end of the experiment.

Each part of the task was completed in three steps, after participants were presented with 3 picture-pairs as warm-ups and were asked if they had any questions. In the **first step**, participants were presented with 20

picture-pairs in a sequence, where they were asked to choose one in each pair according to the instructions of each task (see Table 1). Their responses were categorized into two piles: (+) for chosen pictures, (-) for the non-chosen. In the **second step**, participants were presented with one picture at a time, 10 of those they chose (+) and 10 of those they did not (-) and were asked to confirm whether each picture belonged to their choices ("Is this one of those you chose?"). At all times, the pictures presented in this step were selected in the following manner: the first 10 pictures of the (+) pile, and the last 10 pictures of the (-) pile in order to allow for a higher probability of remembering non-chosen stimuli in the next step of the task. Participants' responses were simultaneously categorized into four piles, as illustrated in Table 2.

Table 2. Categories of responses

REMEMBERED (R)		MISREMEMBERED (M)	
+	_	+	_
Chosen pictures remembered as chosen	Non-chosen pictures remembered as non-chosen	Chosen pictures misremembered as non-chosen	Non-chosen pictures misremembered as chosen

Then the participants were asked to watch a short film lasting roughly 5 minutes on a computer screen, and provided with headphones to listen to the voiceover and accompanying music.[35] They were told that this was part of the task, although this was actually a break that allowed the transition to the final step by giving the researcher the time to match all the cards to their initial pairs and conduct the manipulation.

In the **third step**, participants were presented again the 20 picture-pairs (of step 1) and each time they were asked to motivate the choice they were presented as their own ("Why did you chose this one?"); however, 4 of the picture-pairs were manipulated: one of each category shown in Table 2. The "chosen" picture of each pair was presented always at the same position on the right side of the participant, while concurrently asking them to motivate their choice. The manipulated pairs appeared at the same position in the sequence (4, 8, 12, 16) and in the same order (+R, +M, -R, -M). The manipulation was conducted by substituting the non-chosen picture for the one actually chosen, and presenting it to the participant as "chosen". The few cases where participants provided less than the four anticipated categories of responses shown in Table 2 were treated as the rest, manipulating one card of each category the participants had formed.

In cases of detection of manipulations (discussed in detail in the next section), the experimenter said that this was accidental and explained this as an unintentional mix-up of the pictures cards. When the participants provided their motivations for all picture-pairs, the first task in the experiment was completed. In the second task, the exact same procedure was followed, but assigning the participants a different instruction and a different kind of pictures, as shown in Table 1. At the end of the second task, participants were asked if they had any questions; afterwards, they were (shortly) interviewed on their overall impression of the task in order to assess

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[35] The two selected short films were: 1) Charles Bukowski's animated poem, "The man with the beautiful eyes" (5.37'') for the task with human faces as stimuli, and 2) Rafael Deugenio's film on a selection of F. Pessoa's poems, "Meanings" (4.50'') for the task with abstract figures as stimuli. These were chosen so as to be relatively engaging, and as they dealt with issues of aesthetics, could be seen as belonging to the context of the experiment.

potential detection of the manipulations retrospectively (e.g. "What did you think about the experiment?"; "Did you find anything odd about the experiment?"). All of the sessions were videotaped, and the responses for the manipulated choices were later transcribed verbatim and translated in English.

The methodological triangulation that cognitive semiotics advocates (see Chapter 2, Section 2.2) was reflected in the design of the study: A 1st person method was used for the analysis of the participants' responses and intuitive judgments as described in the following section. A 3rd person method was used for the analysis of the quantitative data from the experiment. Importantly, a 2nd person perspective methodology involving social interaction between experimenter and participants was critical for the following reasons. In order to secure that the experiment would truly involve "a simple choice task in combination with a covert manipulation of the *outcome* of the choices made", as stated by Johansson et al. (2008), the manipulation was strictly limited to the presentation of the "wrong" card. From that point on, the experimenter adopted a rather naive stance, allowing participants the liberty to express themselves freely, engaging with them in an open dialogue. The reason for that was to minimize the authority that the researcher's role might carry and to make the interaction more equal. This was an important aspect of the methodology, since authority could be on its own right a factor influencing participants' detection of manipulation and a more firm or categorical stance from the researcher's side could negatively effect participants' (expression of the) detection of manipulation. The adopted naïve stance of the experimenter, the design of the experiment itself, and the fact that the participants were recruited from the experimenter's social circles allowed for casual interaction, dialogic communication, and an empathetic approach between both sides to develop, like in any other natural social context.

3.3. CLASSIFICATION OF RESPONSES

3.3.1 DETECTION CRITERIA

Participants' responses for the manipulated trials were annotated with respect to the *type of detection* and categorized into three levels, shown in Table 3. Each level included one or more *patterns* that characterized participants' responses for both the manipulated picture cards (M.C.) and preferred picture cards (P.C.) of the manipulated trials, forming a (10-category) scale, described with examples below.

Table 3. Type of detection, type of response, and patterns of responses

TYPE OF DETECTION	TYPE OF RESPONSE	RESPONSE PATTERN
Clear	Categorical	Reject M.C. & justify the choice of the P.C. (1)
	Conciliatory	Question, reject M.C. & justify the choice of the P.C. (2)
Possible	Uncertainty	Question M.C. & state preference for P.C. (3) Question M.C. & motivate M.C. (4) Do not motivate M.C. & state preference for P.C. (5) Motivate M.C. & state preference for P.C. (6)
None	Ignorance	Do not motivate M.C. (7) Cannot motivate M.C. spontaneously, but does so reluctantly. (8)
	Indifference	Evaluate choices as of equal weight. (9)
	Acceptance	Motivate M.C. (10)

For the Clear Detection level, the patterns in participants' responses were either to reject the M.C. as their choice and to justify the choice of the P.C. in a rather monological manner, coded as *Categorical*. Or else to question the M.C. and then reject it by simultaneously justifying the choice of the P.C. in a more dialogical way, coded as *Conciliatory*, as the examples (1-2) show, respectively.

(1) B: *Διάλεξα αυτό [P.C.] γιατί είναι πιο απλό.*
     'I chose that one [pointing to P.C.], because it's simpler'

(2) *B: Αυτό διάλεξα;*
     'Is this the one I chose?'
     A: Οχι;
     'Isn't it?'
     B: Μου φαίνεται πως διάλεξα [P.C.] [A: α! σορρυ] μου φαίνεται πως διάλεξα αυτό [A: οκ], γιατί σα να σκέφτηκα ότι αυτό μου κάνει με μελάνι χυμένο, ενώ αυτό μου κάνει με αίμα χυμένο. Ναι, νομίζω ότι διάλεξα το μελάνι.
     'It think I chose [pointing to P.C.] [A: oh, sorry] I think I chose this one [A: ok], because I kind of thought that this looks like spilled ink, while this looks like spilled blood. Yes, I think I chose the ink.'
     A: Οκ.
     'Ok.'

The second level, that of Possible Detection, includes four different categories, all coded as *Uncertainty*: the participants questioned the M.C. as their choice and either state their preference for the P.C., as in example (3), or motivated the P.C., as in (4). According to the other two categories, the participants either did not provide any motivations for the M.C. in order to justify it as their choice, as in (5), or in those cases that they did, they all stated their preference for the P.C., as in (6).

(3) *B: Αυτό διάλεξα, ε; Δεν ξέρω...*
     'This is the one I chose, right? I don't know...'
     A: Γιατί αμφιβάλλεις;
     'Why do you have doubts?'
     B: Το άλλο μου κάνει για πρόσωπάκι. Μπορεί το άλλο να διάλεγα τώρα.
     'The other one looks like a face. Perhaps I would choose the other one now.'

(4) B: *Αυτήν; [με έκπληξη] Μ'αρέσει η φάτσα της.*
     '*Her?* [surprised] I like her face.'
     A: *Γιατί το είπες έτσι; Αμφιβάλλεις;*
     'Why did you say it like that? Do you doubt it?'
     B: *Ναι, νομίζω οτι διάλεξα αυτήν [P.C.].*
     'Yes, I think I chose this one [P.C.].'

A: Α, νομίζεις; Μπορεί να μπέρδεψα τις κάρτες. Πες μου γιατί νομίζεις πως διάλεξες αυτήν;

'Oh, you think? Maybe I mixed up the cards. Tell me then why do you think you chose her.'

B: *Δεν ξέρω ποιά διάλεξα. Δε θυμάμαι. Αυτή [P.C.] είναι πάντως πιο ωραία από την άλλη.*

'I don't know who I picked. I don't remember. She is anyway [pointing to P.C.] prettier than the other one.'

(5) B: *[Παύση] Και 'δω θα διάλεγα αυτήν αν το ξανασκεφτόμουν. Έκανα λάθος [Α: οκ] είναι πιο συμπαθητική απ'αυτήν.*

[Pause] 'Here too, I would have chosen her, if I could think it over. I did a mistake [A: ok] she is nicer than her.'

(6) B: *Κι αυτή είναι πιο χαμογελαστή απ'την άλλη. Πιο...Ή όχι. Δεν ξέρω [Α: καμιά φορά όταν τις ξαναβλέπουμε] νομίζω ότι θα διάλεγα αυτήν [Α: οκ] αν ξαναγινόταν το τεστ.*

'She is also smiling more than the other one. More…Maybe, not. I don't know [A: sometimes when we see them again] I think I would choose her [A: ok], if we could rerun the test.'

The final level includes the responses that were coded as non-detected. The categories here were those of *Ignorance, Indifference*, and *Acceptance*. In the first one, the participants either did not motivate the M.C. at all, as in example (7), or they did so reluctantly (8). In the second category, the participants evaluated both of the alternatives cards as choices of equal weight (9). Finally, in the *Acceptance* category, the participants provided spontaneously motivations for the M.C., as in example (10).

(7) B: *Δεν ξέρω. Γιατί ήταν…Δεν ξέρω. Πώς έτσι μου βγήκε αυτό τώρα. Δεν έχω συγκεκριμένο λόγο.*

'I don't know. Because he was...I don't know. How did it come to me like that…I have no specific reason.'

(8) B: *Ούτε εδώ μπορώ να…Αυτό...δε θυμάμαι καν να τους είδα αυτούς τους δυο. Δεν...Δε θυμάμαι να τους είδα, ίσως το μαλλί, το χτένισμα, το στυλ του, το στυλ του.*

'Here as well I can't…This…I don't even remember seeing these two. I don't…I don't remember seeing them, maybe his hair, the haircut, his style, his style.

(9) B: *[Παύση] Αυτό…[παύση] Δε μ'άρεσε κανένα και είπα απλά αυτό {γελώντας}.*

'[Pause] 'This one...[pause] I didn't like neither of them and I just said this one {laughing}.'

(10) B: *Μ'άρεσε το σχήμα του.*

'I liked its shape.'

3.3.2. BETWEEN GROUP COMPARISON

Participants' responses were evaluated in a within and between group comparison, since the two groups combined different factors and type of choice, as shown in Table 4. More specifically, Group 1 combined the factors of high affectivity and pictoriality with the less consequential task and low affectivity and pictoriality to

the more consequential task, while Group 2 combined the high affectivity and pictoriality to the more consequential task and low affectivity and pictoriality to the less consequential one. Thus, the possible effect of degree of consequentiality was estimated within each group, while the effect of affectivity and consequence needed to be compared between groups.

Table 4. Between group comparison

FACTOR	TYPE OF CHOICE	
Affectivity + Pictoriality	More consequential faces (G1)	More consequential figures (G2)
Affectivity + Pictoriality	Less consequential figures (G2)	Less consequential faces (G1)
Consequence	More consequential faces (G1)	Less consequential faces (G2)
Consequence	Less consequential figures (G1)	More consequential figures (G2)

3.4. DETAILED HYPOTHESES

The methodological design and the classification scheme, as they were presented in this chapter, and taking into consideration the theoretical background and general hypotheses of Chapter 2, led to the formulation of the following more specific hypotheses against which the results were assessed:

➢ Hypothesis 1: The detection level of the manipulation will be higher for the remembered choices than for the non-remembered choices

➢ Hypothesis 2: The detection level of the manipulation will be higher for the more consequential choices than for the less consequential ones

➢ Hypothesis 3: The detection level of the manipulation will be higher for the choices with higher affective valence (and pictoriality) than those with lower affective valence (and pictoriality)

The three hypotheses may be said to constitute a meta-hypothesis, which can be considered supported if the first and at least one of the last two hypotheses find support.

o META-HYPOTHESIS: Memory influences (the detection of) manipulation blindness and choice-awareness.

> The situation has provided a cue; this cue has given the expert access to information stored in memory, and the information provides the answer.
>
> Daniel Kahneman

> Science manipulates things […]. It makes its own limited models of things; operating upon these indices or variables to effect whatever transformations are permitted by their definition, it comes face to face with the real world only at rare intervals.
>
> Maurice Merleau-Ponty

4. RESULTS

4.1. INTRODUCTION

This chapter presents the results of the empirical study and links them to the detailed hypotheses provided at the end of Chapter 3. This is done on the basis of descriptive statistics, reserving the presentation of the inferential statistics for the end (Section 4.6). Table 5 shows all the responses to manipulated trials, and their proportions of the total number.

Table 5. Response type of manipulated trials, total = 316

TYPE OF DETECTION	TYPE OF RESPONSE	NUMBER OF RESPONSES (%)
Clear	Categorical	68 (21%)
	Conciliatory	37 (12%)
	Retrospective	2 (1%)
Possible	Uncertainty	46 (15%)
	Ignorance	29 (9%)
	Indifference	25 (8%)
None	Acceptance	109 (34%)

As can be seen in Table 5, the responses were almost equally divided between *Detection*, when including *Clear* and *Possible Detection (*49%), and *No Detection* (51%). This high rate of detections (especially in comparison to the results of previous CB studies, e.g. Johansson et al. 2005, 2008, etc.) consisted predominantly of *Categorical* responses. Among the *No Detection* responses, the majority was categorized as cases of *Acceptance;* however, a third (33%) of the total *No Detection* responses belonged to the categories of *Ignorance* and *Indifference.* This rather mixed stance towards *No Detection* may be argued to entail a degree of manipulation awareness, expressed implicitly either by participants' ignorance on acknowledging and justifying the manipulated choice as their own, or by treating both alternatives as indifferently "equal", i.e. as parts of a *forced* choice task (see more in Chapter 5, Section 5.2.2). Notably, all of the detections were expressed concurrently with the manipulation, apart from two retrospective instances. In these latter cases the participants had accepted the (first) manipulation trial (expressing uncertainty), but when later presented with the next manipulation trial, not only did they not accept the "false

choice", but referred back to the trial for which they had already accepted the manipulation, identifying their preferred card and acknowledging it as their true choice. Let us now look at the evidence for the three individual hypotheses.

4.2. HYPOTHESIS 1: DETECTION OF MANIPULATION & MEMORY

H1 examined the relationship between detection and memory, expecting the following correlation: the better remembered the original choices were, the more participants would detect their manipulation. Figure 3 illustrates the detection rates of manipulations for the remembered (R) and misremembered (M) choices.
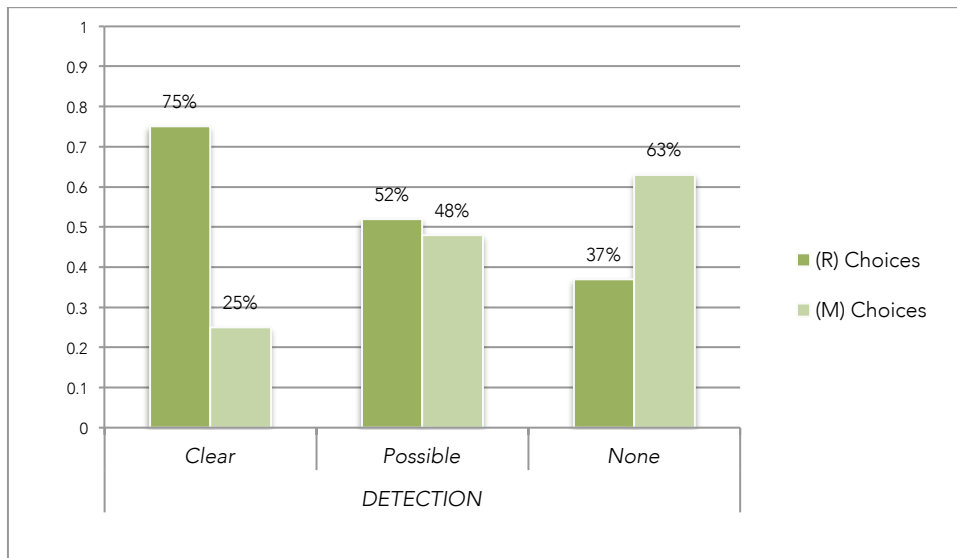
Figure 3. Detection of manipulation for Remembered (R) and Misremembered (M) choices

As expected, a clear majority (75%) of the *Clear Detection* cases concerned choices that participants had remembered correctly in Step 2 of the task (see Chapter 3). Almost as a mirror image to this, in the case of *No Detection*, the misremembered choices predominated. For *Possible Detection* the rate was fairly equal for both remembered and misremembered choices, suggesting that even when participants remembered making the original choice, they were often still open to the possibility of error on their behalf, since the experimenter's "expertise" was rarely openly questioned. Conversely, even when participants misremembered, they could sometime still feel that something was "wrong" with the presented choice, expressing it with their uncertainty. However, since the *Possible Detection* rate was equal for both remembered and misremembered choices, and for an easier analysis of the results, only the *Clear Detection* will be considered (separately) for the rest of the chapter.

The large and significant (see below) difference between the rates of detection for remembered and misremembered choices supported H1, the main hypothesis of the study, concerning a positive correlation between memory and detection of the choice manipulation.

4.3. HYPOTHESIS 2: DETECTION OF MANIPULATION & CONSEQUENCE

H2 concerned the role of choice-consequence for the detection of manipulation, and indirectly (especially given the support for H1) for the memory of choice. Figure 4 shows the *Clear Detection* divided by the type of task (more or less consequential) for both the remembered (R) and misremembered (M) choices.
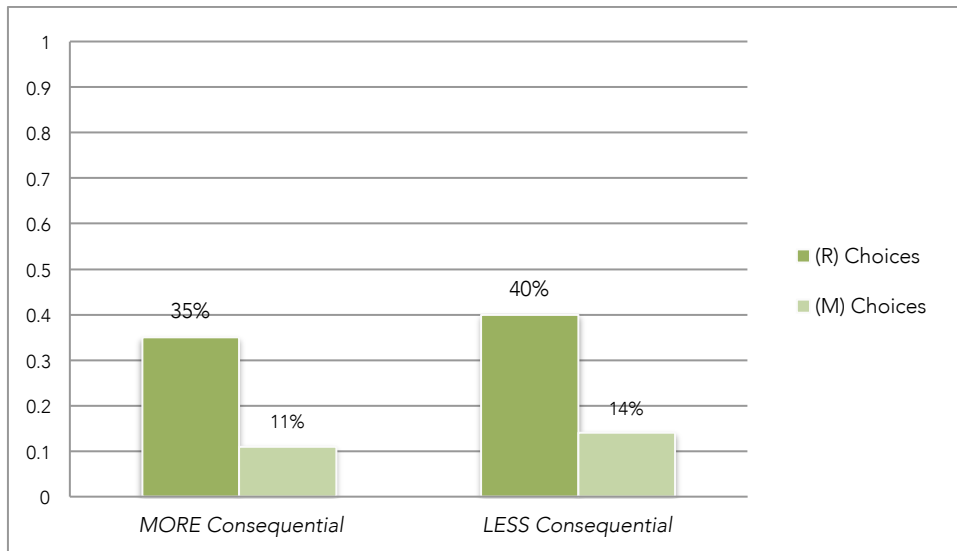
Figure 4. Detection of manipulation per type of choice for (R) and (M) per the factor consequentiality

As can be seen in Figure 4, the proportions of the detections in the two conditions for the factor consequentiality were fairly equal, and so were the proportions of remembered (R) and misremembered (M) choices in each condition, indicating that in the current experiment, participants' detection of manipulation was not influenced by the (high or low) consequentiality that the different tasks assigned. Thus, it can be concluded that H2 was not supported.

4.4. HYPOTHESIS 3: DETECTION OF MANIPULATION & AFFECTIVITY

H3 examined the way different degrees of abstractness, based on stimuli with high/low affective valence and pictoriality, may influence the detection of choice manipulation (and the remembering of a choice). Figure 5 shows the sum of *Clear* detections, according to different types of stimuli for both the remembered (R) and misremembered (M) choices.
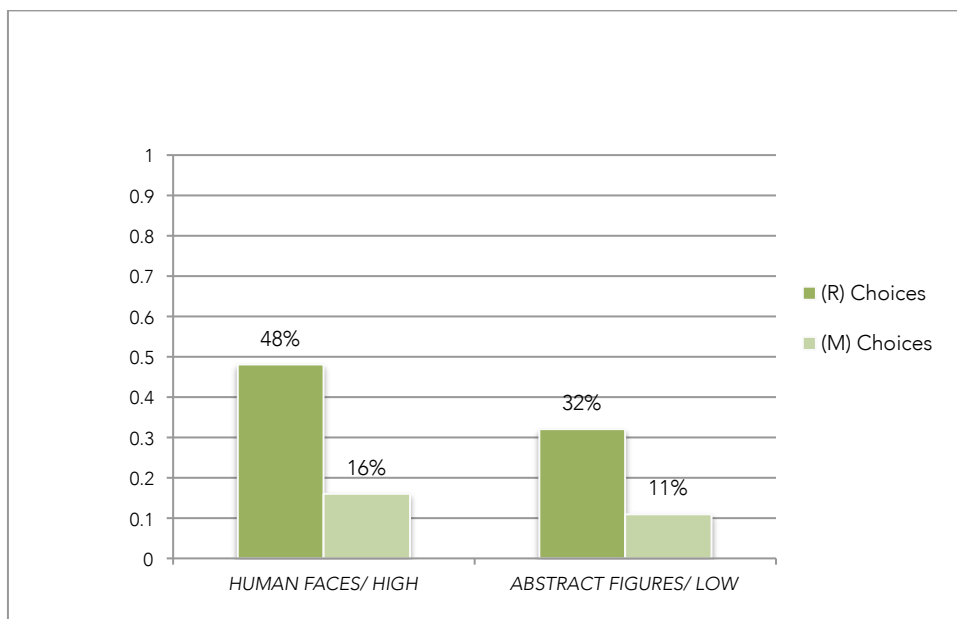

Figure 5. Detection of manipulation per stimulus for (R) and (M) per the factor affectivity (and pictoriality)

As Figure 5 displays, the rates of detection for the stimulus with higher affective valence and pictoriality (64%) were higher than those with low valence/pictoriality (43%), and this difference was statistically significant. Thus, as expected, participants' detection of manipulation depended on the degrees of affectivity, and/or pictorial nature of the visual representations. Furthermore, the distribution between (R) and (M) choices in the two conditions was also statistically significant (see Section 4.6). These results accordingly support H3.

4.5. JOINING THE HYPOTHESES

As explained in Chapter 3, Section 3.3.2, the two groups of participants combined two different types of choice i.e. more/less consequential (within groups) to different kind of visual stimuli (across groups). Table 6 shows the distribution of the manipulated responses across the different factors considered for the experiment per group. Since, as already stated, the results for H1 was statistically significant with 75% being *Clear Detection* for the Remembered choices, Table 6 sums *Possible* and *No Detection* together, contrasting them to *Clear Detection*, in order to give a more conservative (careful) interpretation of detection.

Table 6. Distribution of manipulated responses for H1-H3

	TYPE OF CHOICE /STIMULUS		DETECTION	
			Clear	Possible & None
GROUP 1	Consequence	Affectivity/pictori		
(R) Choices	Less	High	**27 (68%)**	13 (32%)
	More	Low	16 (40%)	24 (60%)
(M) Choices	Less	High	11 (29%)	27 (71%)
	More	Low	7 (20%)	29 (80%)
GROUP 2				
(R) Choices	Less	Low	16 (38%)	26 (62%)
	More	High	21 (50%)	21 (50%)
(M) Choices	Less	Low	4 (10%)	34 (90%)
	More	High	5 (13%)	35 (87%)

Considering the three hypotheses together, it would have been expected that the remembered choices of *more* consequence and *high* affectivity would provoke most of the detections, while the misremembered choices of *less* consequence and *low* affectivity the least of the detections. Yet, as table 6 exhibits, overall the higher rate of detections were provoked for the remembered choices that combined the *less consequential task* with (the stimulus of) *high affectivity/pictoriality* (Group 1), while the lower rate of detections was indeed for the misremembered choices that combined the *less consequential* task with *low affectivity/pictoriality* (Group 2), as it was expected. This indicates that overall the proportion of detections was higher for the remembered trials and for the high affectivity trials, while the different degrees of consequence did not make any difference, nor there was a joint effect of affectivity and consequence.

4.6. STATISTICAL DIFFERENCE OF DETECTION IN H1-H3

Table 7 concentrates the results of the statistical analyses for all the hypotheses. Where the difference is

statistically significant, the figures are given in bold face. The results are the estimate of the effect (EST), its standard error (SE), the z-value, and the p-value.

Table 7. Statistical effects on detection in manipulated responses in H1-H3.

	EST	SE	z	p
Intercept	-2.5107	0.4649	-5.400	0.000
H1 Memory	2.1566	0.3556	6.065	0.000
H2 Consequence	0.4094	0.3096	-1.322	0.186
H3 Affectivity	0.9705	0.3175	3.056	0.002

The differences in proportions in Table 7 indicate that the factors memory and affectivity predict (in statistical terms) detection and that the detection of manipulation for H1 and H3 could not be due to chance. However, this was not the case for Consequence (H2). More specifically, when looking at the positive values of the estimated effects (EST) it can be seen that the likelihood that a manipulation is detected increases if the stimulus is remembered. SE estimates show the amount of uncertainty associated with the effect estimates, and as p values indicate, the likelihood of this is small for memory and affectivity predictors, but not for consequence. The estimates are in a transformed scale; if they are turned back into proportions, they give four predicted percentages that a manipulation is detected, as shown in Table 8.

Table 8. Predicted percentages of detection

	High Affectivity (faces)	Low affectivity (figures)
(R) Choices	60%	36%
(M) Choices	15%	6%

4.7. SUMMARY

We may conclude that the meta-hypothesis of the study indicating that memory for choice is indicative of choice awareness and plays a significant role in detecting manipulation of choice (and thus low "manipulation blindness") found strong support, since the majority of detections of manipulation were found to occur for the remembered choices. Concerning the two factors that were employed to examine their potential influence to the detection of manipulation (and indirectly to remembering), only one found support: the affective valence and pictorial status of the stimuli contributed to manipulation detection for both the remembered and misremembered choices, while the type of choice concerning its consequential impact did not seem to have such an impact.

·C H A P T E R 5·

I observe myself and interpret my actions rather than getting to know my beliefs and desires from the inside. And after explaining a certain act and having clad my behaviour in words, the description of the mental entities deemed responsible for my actions now has a concrete existence not previously enjoyed.

Peter Johansson

Said by whom? Said to whom? Not by a mind to a mind, but by a being who has body and language to a being who has body and language, each drawing the other by invisible threads like those who hold the marionettes – making the other speak, think, and become what he is but never would have been by himself. […] There is said to be a wall between us and others, but it is a wall we build together, each putting his stone in the niche left by the other. Even reason's labours presuppose such infinite conversations.

Maurice Merleau-Ponty

5. DISCUSSION

5.1. INTRODUCTION

The results of the study, as well as much of the theoretical discussion presented in Chapter 2, support the position that our tendency to be occasionally "blind" to manipulation does not undermine the conscious awareness of our choices. This chapter elaborates this position by discussing the results of the study in relation to the hypotheses and the theoretical background, ending with a short summary.

5.2. THE ROLE OF MEMORY IN DETECTION

It may seem commonsensical that memory is a significant factor in experiments involving manipulation blindness: the better we remember a choice, the more likely we are to detect its manipulation. However, as discussed in Chapter 2, the results of previous research into detection and memory vary considerably (e.g. Johansson et al. 2008; Sauerland et al. 2013; Sagana et al. 2013, 2014; Cochran 2016; Stille et al. 2017). Even more, some of the leading CB researchers suggest that the opposite of common sense is true: memory does not account for "blindness" (Sagana's et al. 2014) and it is rather that manipulation "defines" participants' memory (i.e. the manipulated choice is remembered as the genuine choice) (e.g. Johansson et al. 2008; Cochran 2016; Stille et al. 2017). Even when participants remember their choices after the manipulation is exposed, this is suggested to be due either to "a complex mechanism […] that *allows* recall […], but *disables* detection"(9) – pointing to a "subtle malfunction in recognition" (9) – or to participants' self-persuasion process (Johansson et al. 2011).[36] The results

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[36] Based on the idea that "endorsing choices suggested by others may generate a degree of cognitive dissonance, which people want to overcome" (Festinger 1962; Henkel & Mather 2007).

that underlie these claims may seem to be antithetical to the current findings, but they need not be so. Since participants generally remember and detect their choices after the manipulation is revealed (in Sagana et al. 2014), yet also detect the manipulation more for the remembered choices (in this thesis), this suggests it may be more profitable to turn our attention from "blindness" as such (i.e. being unaware of the manipulation) to the *expression of detection*.

The results of the empirical study indicate a parallelism between the types of detection (Clear and Possible, see Table 5) and the two levels of choice discussed in Chapter 2 (Categorial and Operative) with their correlates to explicit and implicit memory. It is thus possible that the latter provide participants with different amount of certainty in expressing detection, and consequently, in the resistance to or acceptance of manipulation. This suggests that different ways of remembering, as well as various other factors (e.g. experimenter's authority, way of manipulation, participants' individual characteristics) influence (the expression of) detection and as such, they need acknowledging prior to any concluding remarks about the role of memory in manipulation blindness.

As discussed in Chapter 2, the (higher) level of categorial intuition accounts for deliberate choices that involve ideas and reasons that may be explicated with language. When participants recall a choice of this kind, they pinpoint and express their reasoning during the process of choice-making, and on the basis of this they defend or reject the presented choice. This type of (deliberate) choice and explicit way of remembering creates more certainty in (defending) their choices, which is expressed relatively clearly. Hence, it is likely that the more explicitly participants remembered making a choice, the "clearer" the type (and expression) of detection, which is supported by the rate of 75% of *Clear Detection* for remembered choices. Example (11) demonstrates the way participants express detection by recalling and explicating their choice-process.[37]

(11)   B: *Α, μήπως διάλεξα αυτήν; [P.C.] [A: μπορεί, μπορεί] Ναι, τώρα εδώ μήπως διάλεξα αυτήν, θυμάμαι... [A: οκ, γιατί;] Γιατί μου κάνει κάτι σαν Αφρικάνα, ξέρεις [P.C.]. Αυτήν πρέπει να διάλεξα, βασικά [P.C.].*

'Oh, perhaps I picked her? [pointing at P.C.] [A: perhaps, perhaps] Yes, now here, perhaps I picked her [pointing to P.C.]. **I remember…[A: ok, why?] Because to me she seemed like an African,** you know [P.C.]. I must have chosen this one, basically [P.C.].'

According to the phenomenology-based theory presented in Chapter 2, our more spontaneous choices based on impressions and impulses derive from the (lower) level of operative intentionality, a form of bodily awareness that precedes explicit understanding. But this level acts rather paradoxically: it gives participants the implicit awareness (the "felt certainty") that something is "wrong" with what is presented to them, but deprives them of the explicit certainty of remembering making the choice or not. Their type of response to detection is thus likely to be more hesitant and unsure. The equal rates of remembered and misremembered choices of *Possible Detection* (Chapter 4, Section 4.2, Figure 3) indicate just that: for the remembered choices, participants' detection may stem from explicitly recalling their choices (higher-level) – yet expressing it with uncertainty under the

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[37] Example (2) (Chapter 3, Section 3.2.1) is also instructive: 'I think I chose [pointing to P.C.] [A: oh, sorry] I think I chose this one [A: ok], because I kind of thought that this looks like spilled ink, while this looks like spilled blood. Yes, I think I chose the ink.'

influence of other factors (see Section 5.2.1 below). For the misremembered choices, meanwhile, participants may acknowledge something erroneous (lower-level), but in the lack of explicit memory they adopt a hesitant and unsure way of expressing detection. The following two examples (12-13) are indicative of *Possible Detection* for a remembered and misremembered choice, respectively:

(12)   *B: Αυτό διάλεξα [M.C.]?*

'Is this the one I chose [M.C.]? '

A: Δεν ξέρω, όχι; [παύση] Μπορεί να μπέρδεψα τις κάρτες.

'I don't know. Didn't you? [pause] Maybe I mixed up the cards.'

B: Ναι. Νομίζω πώς αυτό είχα διαλέξει [P.C], αλλά τέλος πάντων [A: γιατί;] γιατί; γιατί είναι λίγο αστείο αυτό [M.C.] δεν ξέρω κιόλας αν το διάλεξα αλλά μου φαίνεται λίγο αστείο με τις βουλίτσες αυτές εδώ. Από τη μια πάει να σε τρομάξει και από την άλλη είναι λίγο αστείο.

'**Yes. I think I chose that one…but anyway** [A: why?] why? Because this is a bit funny [M.C.] I don't know if I chose it but it looks funny with these dots here. It's about to scare you but at the same time it's funny.'

A: Ενώ αυτό; [P.C.]

'And this one?' *[P.C.]*

B: Αυτό κάνει τη δουλειά του. Είναι πιο αφηρημένο.

'**This is how it's supposed to be. It's more abstract**.'

(13)   *B: Τη διάλεξα αυτή, ε; και δε διάλεξα την άλλη;*

'I did choose this one, ha [M.C.]? and I didn't choose the other one [P.C.]?'

A: Δεν ξέρω. Μπορεί να έχω κάνει λάθος εγώ.

'I don't know. Maybe *I* did something wrong.'

B: Δε θυμάμαι. Μου βγάζεις πάντα αυτή πιο μπροστά [δείχνοντας M.C.], αλλά νομίζω πως θα διάλεγα αυτήν είναι πιό ομορφούλα [P.C.].

'**I don't remember now.** You always show me this one further ahead, but I think I would choose the other one [P.C.], she is prettier [P.C.].'

A: Μπορεί να μπερδεύτηκα εγώ.

'Maybe I got confused'

B: Ναι, όχι. Δε θυμάμαι και εγώ τώρα τι έκανα σ'αυτό.

'**Yes, no, I don't remember now about this one.**'

In both examples, participants first question the presented choice. In the case of explicit remembering (12), *as soon as* the researcher suggests the possibility of a mistake on her behalf, the participant consents to it and expresses the thinking behind choice-making for the preferred choice. In (13), however, the participant without the "assistance" of explicit memory expresses detection hesitantly *despite* the researcher's suggestion that it could be her "fault".

   The previous examples suggest that detection (and its expression) is influenced by the different types of

remembering and imply that other factors in combination with memory should be acknowledged, as discussed in the following sub-section.

5.2.1. SECOND-PERSON PERSPECTIVE

A common phenomenon observed in the study was the dependence of (the expression of) detection on specifics of the social interaction, as shown by the adopted 2nd-person perspective methodology. The experimenter's dialogical stance aimed to weaken the role's authority, allowing participants to express detection of manipulation more freely. The assessment of the manipulated responses provided some indicative patterns in this regard, supported with the following examples.

The participants largely relied on the legitimacy of the experiment, assuming that what was presented to them was accurate. In the face of doubt, the (expression of) detection changed. Notably, examples (14-15) were coded as *Clear/Conciliatory Detection* for remembered choices.

(14) *B: Μ'άρεσε πιό πολύ [M.C.]. Εσύ μου έδειξες σίγουρα αυτά που έχω διάλεξει, έτσι; δεν μπορεί να μου δείξεις άλλο.*

'I liked it more [M.C.]. You definitely showed me what I've chosen, right? You can't possibly show me otherwise.'

A: Δεν ξέρω...μπορεί να έχω κάνει μπέρδεμα–

'I don't know, maybe I mixed something up–'

B: Επίτηδες μπορεί να το έχεις κάνει το μπέρδεμα [A: μπορεί να-] γιατί βλέπω οτι κάποια δεν τα έχω διαλέξει και λέω γιατί–

'You might have mixed up something on purpose [A: it might be that–] because I see that I haven't chosen some of them–'

A: Ε, να το εκφράζεις τότε άμα νομίζεις οτι–

'Feel free to express if you think that–'

B: Γιατί έχει γίνει σε κανα δυο, όταν σου είπα ότι δεν το διάλεξα, το άλλο είχα διαλέξει

'Because it happened with one or two, when I told you that I didn't choose this one, I had chosen the other one.'

A: Ναι, εκείνο...ούτως ή άλλως όλα γράφονται–

Yeah, that…anyhow everything is recorded–

B: Και τώρα, αυτό διάλεξα [δείχοντας P.C.], δε διάλεξα αυτό [M.C.].

'And now, I chose this one [pointing to P.C.], not that one [M.C.].'

A: Διάλεξες αυτό [P.C.];

'You chose this one [P.C.]?'

B: Ναι.

'Yes.'[38]

(15)   *B: Σαν αρουραίοι; [M.C.] [παύση] Αυτοί είναι πιγκουίνοι [P.C.] [παύση]*

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[38] It should be noted that that was the final manipulation trial of both tasks.

'Like rats? [M.C.] [pause] These are penguins [P.C.] [pause]'

A: Οκ

'Ok.'

[pause]

B: Ναι, δεν ξέρω. Μ'άρεσε πιο πολύ;

'Yeah, I don't know. I liked it better?'

A: Περίμενε, γιατί αν αυτοί είναι αρουραίοι και αυτοί είναι πιγκουίνοι– [γέλιο]

'Wait, these are rats and these are penguins–[laughter]'

B: Μήπως διάλεξα τους πιγκουίνους; Τί παθαίνω με τους πιγκουίνους και τις μπαλαρίνες; [παύση]. Μπορεί να σκεφτόμουν ότι ήθελα να πω αυτό, και να είπα τελικά αυτό.

'Maybe I picked the penguins? What's going on with me and penguins and ballerinas? [pause] **I might have thought I wanted to say this one [P.C.], but I eventually said that one [M.C.].'**

A: Οκ.

'Ok.'

B: Και στη μπαλαρίνα της μιάς τα πόδια ήταν πιο ίσια, μήπως είπα εκείνη; [P.C.] [γέλιο]

'And to the ballerina [referring to the previous manipulated trial], the one who had her legs straight, did I maybe say that one [P.C.] [laughter]?'

A: Πολύ πιθανό...ρε συ ναι φυσικά γιατί είναι πολλές οι κάρτες και όταν τις ξαναφτιάχνω...εμένα με ενδιαφέρει σ'αυτό το βήμα η αιτιολόγηση της επιλογής, όχι δεν έχει να κάνει–

'It's possible…you know yes because the cards are too many and when I redo them...but at this step, what is important is to motivate your choice, so it doesn't have to do with–'

B: Τα πιγκουινάκια ήταν. [P.C.]

'It was the penguins. [P.C.]'

In example (14), the participant spontaneously accepts the manipulated choice and then immediately questions it. When the researcher suggests a potential mistake from her side, the detection is expressed clearly. If the researcher's reply had firmly supported the presented choice as accurate, the participant more likely would not have *expressed* the detection despite being aware that something was wrong with the presented choice. In (15), a case of a retrospective detection for a remembered choice, the participant detected that something was wrong, but expressed it more firmly only after the researcher suggested the possibility of a mistake with the cards. In similar examples, participants *after questioning the card themselves* show surprise at the possibility of a cards mix up by expressions such as, "Could it be so?", "Is this possible?", etc., followed then by the rejection of the manipulated choice and the justification of the preferred one. These cases show that although participants apparently remembered their choices, their type of response was partly influenced by the interaction with the researcher.

Overall, participants expressed their trust and confidence in the experimenter's role (as an "expert" who conducts the task accurately). This trend was so strong that in some cases they were eager to acknowledge the "inconsistency" as their own fault. Examples (16-17) indicate this pattern of *Clear Detection* for both a remembered and misremembered choice.

(16)   *Β: Χμ, τώρα που το σκέφτομαι πρέπει να διάλεξα εκείνο. [P.C.]*

'Hm, now that I think about it, I must have chosen that one [P.C.]. '

Α: Ναι; Μπορεί εγώ να μπερδεύτηκα [Β: Οχι] είναι πολλές οι κάρτες–

'Yeah? I might have got confused. **[B: No]** There are too many cards– '

Β: Οχι, όχι, μεταξύ τους... αυτό είναι καλύτερο. Ε…[παύση] όχι.

'No, not, between them…this is better [M.C.]. Em…[pause] no.'

[uncomfortable pause]

Α: Αλλά όμως αν διάλεγες αυτό θα το διάλεγες γιατί…

'So if you chose that one [P.C.], you would choose it because…'

Β: Ναι, είναι πιο εύκολο. Γιατί παραπέμπει σε πιο πολλά πράγματα. Αυτό είναι πολύ συγκεκριμένο.

'Yes, it's easier. It alludes to more things [P.C.]. This one is too specific [M.C.].'

(17)   *Β: Αυτή διάλεξα.*

[pointing to P.C.] 'I chose her.'

Α: Α, Αυτή διάλεξες; σόρρυ.

'Oh, you chose her? I'm sorry.'

Β: Νομίζω.

'I think.'

Α: Μπορεί να μπέρδεψα τις κάρτες.

'Maybe I mixed up the cards.'

Β: Οχι, νομίζω, δε θυμάμαι.

'No, I think, I don't remember.'

Α: Συμβαίνει καμιά φορά…πες μου γιατί διάλεξες αυτή τότε.

'It can happen sometimes...tell me why you chose this one then [P.C.].'

Β: Χωρίς λόγο, νομίζω. Δε θυμάμαι. Εσύ ξέρεις καλύτερα.

'No reason, I think. I don't remember. **You know better.**'

In both examples, the participants are aware that something is wrong with the choice presented to them, but the experimenter's role influences detection: in (16) the participant changes his initial answer from the preferred card to the manipulated one in an effort to *accept* the manipulated choice *after* the researcher acknowledged it as her potential mistake, while in (17) the participant hesitates to attribute the inconsistency to the researcher by proclaiming the uncertainty of accurate recalling. The same pattern (of trust) was identified in *Possible Detection* responses (for both remembered or misremembered choices) (18):

(18)   *Β: Ποιον διάλεξα; Αυτόν διάλεξα, δε διάλεξα αυτόν;*

Who did I choose? I chose this one [M.C.], not the other one [P.C.]?

Α: Μισό λεπτό, θεωρείς ότι διάλεξες αυτόν, μπορεί να μπερδεύτηκα εγώ.

'One sec, you think you chose this one [P.C.], maybe I was confused–'

Β: Όχι, επειδή βάζεις αυτόν πάντα που έχω διαλέξει–

'No, because you always present to me the one I chose from this side–'

A: Ναι, αλλά όμως επειδή είναι πολλές οι κάρτες μπορεί να μπερδεύτηκα, αν νομίζεις οτι διάλεξες το άλλο να μου αιτιολογήσεις αυτό.

'Yeah, but because the cards are so many I might have mixed them up, if you think you chose the other one, explain your motivation for that one.'

B: Δε θυμάμαι τί διάλεξα, γιατί απάντησα στη μνήμη ότι πρέπει να διάλεξα αυτόν αλλά τώρα που βλέπω κι αυτόν δε θυμάμαι τι διάλεξα.

'I don't remember which one I chose, because I answered in the memory step that I chose this one **[P.C.]** but now that I see him, I don't remember which one I chose.

A: Οκ

'Ok'

[uncomfortable pause]

A: Γιατί διάλεξες αυτό ή αυτό, τί κρίτήρια σκέφτηκες–

'Why did you choose this one or that one, or what criteria did you consider–'

B: Κακώς, αν διάλεξα αυτόν, θα ήθελα να το αλλάξω.

'No matter if I chose this one [M.C.], I would like to change it [P.C.]'

Examples (14-18) show that participants expect that the experimenter is reliable, conducting the task based on a consistent system. Questioning her role could also be seen as insulting, and as such it was rarely observed. In the few cases that this happened, their comments still displayed full trust in authority (e.g. " but if you...maybe it's my weak memory... I don't know").

The significance of social interaction for (the expression of) detection is obvious in the previous examples. The extensiveness of this pattern, however, should not come as a surprise when considering the essential phenomenological notion of empathy. The importance of face-to-face interaction is emphasized by the phenomenologist Emmanuel Levinas in his reflections on ethics, as a component of subjectivity (understood as openness to the others "in spite of myself").[39] For Levinas, subjectivity is constituted by our concern and responsibility towards others, which comes prior to choice and cognition, almost as an intrinsic impulse: "it is enough to show oneself, to express oneself, to associate oneself to be entrusted to me" (2000: 12). He argues that in the presence of others our self-righteousness is questioned (1969: 303). In this mode, *face* is an *"authority without force"* (1988: 169), which makes us aware of the presence of the other person, demands the interruption of our spontaneous ways and command us to responsibility as "a gentle force that obligates" (Filipovic 2011: 67), opening up transformative possibilities for ourselves and the ways we relate to each other. Seeing conversation as an ethical relation, as Levinas proposes, helps understand the way in which participants exceed the limits of their selfhood, reach out and meet the other halfway, either by not expressing objection to the suggested choice, or by taking the "blame" upon themselves.

5.2.2. NO DETECTION

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[39]"Before the Other, the *I* is infinitely responsible" (Levinas 1996: 18).

Bartlett (1932) also acknowledges that the manner of remembering *in a group* is influenced by the tendencies apparent in the group:

> Whenever strong, preferred, persistent, social tendencies are subjected to any form of forcible social control (e.g. are disapproved by superior people, or are opposed to the general immediate trend of social development in the group), social remembering is very apt to take on a constructive and inventing character, either wittingly or unwittingly. Its manner then tends to become assertive, rather dogmatic and confident, and recall will probably be accompanied by excitement and emotion. (267)

This statement should make us consider more carefully the manipulated trials coded as *No Detection*. It should be reminded that *No Detection* does not equal *Acceptance*, since it includes *Ignorance* and *Indifference* as participants' response patterns. These patterns could possibly be seen as subtle ways of resisting manipulation, since participants do not explicitly detect the manipulation, but neither do they accept it.

With *Ignorance* participants either did/could not provide arguments to support the manipulated choice (19-20) or did so after first stating their ignorance.

(19)   B: *Δεν ξέρω. Γιατί ήτανε…Δεν ξέρω πώς έτσι μου βγήκε αυτό τώρα. Δεν έχω κάποιο συγκεκριμένο λόγο.*

'I don't know. **Because he was…I don't know**. It just came to me like that. I have no specific reason.'

(20)   B: *Αβυσσος [παύση]. Δεν ξέρω. Έτσι μάλλον.*

'No idea. I don't know. **Just because, I guess**.'

In *Indifference* participants evaluate the choices as of equal weight (stating that they like/dislike both alternatives) (21), or as random, meaningless choices, part of a forced task (22).

(21)   B: *Αυτό…δε μ᾽άρεσε κανένα και απλά είπα αυτό.*

'This one…**I didn't like either of them and I just said this one**.'

(22)   B: *[…] αναγκαστικά επέλεξα αυτή [M.C.] δε θα διάλεγα καμία σε άλλη περίπτωση δηλαδή άμα ήταν να μην επιλέξω καμία δε θα διάλεγα καμία. Δε θα τις έπαιρνα μαζί.*

'**Necessarily**, I chose her [M.C.] **I wouldn't choose any of them under another circumstance,** if I wasn't to chose any, I wouldn't. I wouldn't take them with me.'

Participants' responses of *Acceptance* were at times assertive, providing arguments to explain the manipulated choice as in (23), but sometimes their responses were rather confusing as in (24) going back and forth between the two alternatives, arguing for the [P.C.] and/or against the [M.C.], yet accepting the manipulation.

(23)   B: *Πεταλούδα. Αυτό προσπαθούσα να βγάλω.*

'**Butterfly**. That's what I was trying to get.'

(24)   *B: E, αυτή λίγο [P.C.] …κάτι, γιατί έχει...τα χαρακτηριστικά της δεν είναι τόσο ισορροπημένα [pointing*
         to P.C.], μ'άρεσε [M.C.], αν και χαμογελάει βέβαια [P.C.] και γι'αυτό μπορεί να το σκεφτόμουν κιόλας
         [δείχνοντας εναλλάξ τις κάρτες] γιατί μ'αρέσει όταν χαμογελάν [P.C.], αλλά...οκ...μπορεί...[παύση]
         έτσι να είναι τα χείλη της, να είναι προς τα κάτω και να χαμογελάει και αυτή. Αυτή. [M.C.]

         'Eh, this one [P.C.] is a bit…something, because…her facial characteristics are not that balanced
         [pointing to P.C.], I like [pointing to M.C.], although she is smiling of course [pointing to P.C.] and this is
         why I might have been thinking about it [pointing back and forth to both cards] because I like it when
         they smile [P.C.], **but…ok…maybe…[pause] that's the way her lips are, going downwards but smiling
         too**. Her. [M.C.]'

At some responses, as in (25), participants seemed to provide an argument that was thought up instantly, or
stating with comments, such as "That's it"; "Now it struck me".

(25)   *B: Αυτό μου θύμησε μια μπαλαρίνα αλλά και το άλλο μια μπαλαρίνα, γιατί το διάλεξα [παύση] ναι,*
         μου φάνηκε πιο ολοκληρωμένη εικόνα, δηλαδή ότι έχει κεφάλι, χέρια, ενώ αυτό είναι σαν ακέφαλο.
         Τώρα το θυμήθηκα.

         'It reminded of a ballerina [M.C.] and so did the other one [P.C.], a ballerina, why did I choose it [pause]
         yes, the image seemed more complete, meaning that it has a head, hands, while the other one is
         headless. **I remembered it just now.'**

The examples of *Acceptance* responses here discussed exhibit that participants provided justifications for
the manipulated choices, as they were instructed. Such justifications are characterized by CB researchers as
"confabulations" (see Chapter 2, Section 2.6). However, under the present cognitive semiotic approach the issue is
more complex, as discussed in Section 5.5.

5.3. THE ROLE OF AFFECTIVITY (AND PICTORIALITY)

As shown in Chapter 4, the factor affectivity (combined with pictoriality) played a significant role in
remembering and manipulation detection. Influenced by the affective load and pictorial representation of human
faces, many participants linked what was presented to them to a pre-existing "setting", relating to people in the
real world and their personal experiences, as in examples (26-27). The patterns of their responses to ink blots, on
the contrary, was seen as an effort to connect what was given to them to something else that was not immediately
present, but was not in their proximate environment either, (28-29).

(26)   *B: Σίγουρα δε διάλεξα αυτήν. [M.C] [A: όχι;] Αυτήν διάλεξα [P.C.]*
         'For sure I did not choose her. [M.C.] [A: didn't you?] I chose the other one [P.C.].'
         A: Μπορεί να μπέρδεψα εγώ τις κάρτες. Γιατί;
         'I might have mixed up the cards. Why?'
         B: Γιατί; Πιο συμπαθητική μου φαίνεται, μου θυμίζει λίγο την Μέγκαν Μαρκλ [A: ποιά είναι αυτή, δεν
         την ξέρω] που παντρεύτηκε τώρα τον πρίγκιπα και μου φαίνεται πολύ συμπαθητική η κοπέλα, μπορεί
         γι'αυτό.

'Why? Because she looks nicer, **she reminds me of Meghan Markle** [A: who is she? I don't know her] She got married to the prince and **that girl looks very nice to me**, maybe that's why.'

(27)   *B: Οχι, νομίζω διάλεξα αυτόν [P.C.].*
'No, I think I chose the other one [P.C.].'
A: Οκ, γιατί;
'Ok, why?'
B: Γιατί αυτός [M.C.] μου θυμίζει έναν πρώην…πραγματικά μου θυμίζει έναν πρώην, αλήθεια σου λέω [γέλιο] πάρτον να μην τον βλέπω, αυτόν διάλεξα σίγουρα [P.C.].
'Because this one [M.C.] **reminds me of an ex…indeed he reminds me of an ex, honestly [laughter] take him away, I don't want see him**, I chose that one for sure [P.C.].'

(28)   *B: Γιατί; μ'άρεσε πιο πολύ αυτή η μουτζούρα, απ'την άλλη.*
'Why? **I liked this smudge more than the other one.**'

(29)   *B: Και αυτό μπορείς να πεις ότι είναι ένας άνθρωπος που χορεύει, ενώ αυτό δε δείχνει τίποτα.*
'And this one you can say that **it's a dancing man, while the other one shows nothing.**'

It may be observed that for both kinds of stimuli, participants tended to use as "tools" their subjective experiences, biases, interests and temperamental factors to draw analogies between stimulus and experience. For the less affective and less pictorial stimulus, this aim was not that efficient, since the stimulus appeared "meaningless" and in need of a greater effort on their behalf to attribute meaning to it, in order to respond to the situation they have been given. In this case, participants recruited their imagination, struggled more, and were at times more analytical in their descriptions. For the human faces, on the other hand, their pre-existing experiences provided an easier and more certain way to respond to manipulation, leading to more detections.

The attitude factor (see Chapter 2, Section 2.4.3), understood as "the orientation of the agent towards the images and its less articulated schematic surroundings" (Bartlett 1932: 206), apparently influenced detection in regards to affectivity: the attitude participants had when they perceived the stimuli and made their original choices prevailed, using their responses in order to justify it. As Bartlett (1932) argues, memory is personal exactly because it "depends upon an interplay of appetites, instincts, interests and ideals peculiar to any given subject" (213), justifying participants' tendency to remember and detect manipulations of choices with higher affective valence.

5.4. THE ROLE OF CONSEQUENCE

As shown in Section 4.3, it made no difference for the detection of manipulations whether the manipulated choice concerned an abstract figure regarded as a potentially permanent tattoo or as just aesthetically pleasing. Would we not, however, react strongly if a real-life tattooist gave us the wrong design, or if a person who repelled us showed up as our date for the evening? "Consequence" in the current experiment was based on the presupposition that participants would engage themselves in the imaginary situation assigned to them, reflect

upon the alternatives, and choose accordingly. This supposition, however, could not be controlled, and in retrospect, it is not that surprising that the factor did not have a reliable effect. Yet, it seemed that participants who took the instructions to "imagine" more earnestly in the two tasks, pondering an actual impact on their choices, more often detected manipulation, as in (30).

(30)   *B: Ήμουν ανάμεσα σε αυτές τις δυο και το σκέφτηκα πολύ και δε θυμάμαι τελικά νομίζω πάλι πήρα αυτήν [P.C.] επειδή την είδα, αυτή μ'άρεσε [M.P.] μετά λέω σ'ένα νησί τί θα κάνω μ'αυτήν και πήρα αυτήν που είναι πιο ευχάριστη [P.C.]. Άμα ήταν να επιλέξω ανάμεσα στις δυο μάλλον θα έπαιρνα την άλλην αλλά με προβλημάτισε ότι θα έπρεπε να τις πάρω στο νησί.*

'I was between those two and **I thought hard about it** and I don't remember. Eventually I think I picked that one again [P.C.], because I saw her more, I liked her [M.C.], but then **I thought what would I do on an island** with her so I picked the more pleasing one. **If I was to choose between them more likely I would choose the other one [M.C.], but concerning the island I was troubled.**'

5.5. "CONFABULATION"

The terminological revision from *choice* blindness to *manipulation* blindness (see Section 2.7) reflects two different perspectives: the cognitivist and the phenomenological. On the one hand, mainstream cognitive science takes "blindness phenomena" to be an essential part of our normal cognitive functioning: "We can be blind to the obvious, and we are also blind to our blindness" (Kahneman 2011: 24); similarly, "blindness" to choice designates unreliable agents who essentially lack any choice awareness. On the other hand, phenomenology regards a more complex conception of manipulation blindness, encompassing a variety of factors that may influence our conscious, embodied nature, while acknowledging different degrees of awareness in choice-making.

It seems that conventional cognitive science approaches manipulation blindness similarly to any other cognitive process, and *detection* as a specific process with predetermined characteristics: participants are expected to preserve and recall their choices, detect manipulation, and exhibit variation between manipulated and non-manipulated reports; when they do not, they are considered "blind" (e.g. Johansson et al. 2005, 2008).

> We take processes like recognition, or recall, and draw a line round [them] by saying that, for instance, there is recognition when, an object being re-presented, we feel, or judge or "know" it to be old. We then try to explain this feeling, judgment, or knowledge by some discriminable peculiarity of the processes, which go on within the boundary line that we have drawn. (Bartlett 1932:187)

However, Bartlett (1932) has shown that such "modules" are, in the very least, unrealistic, since "not everything that has been perceived is, as a matter of fact, recognized or remembered" (188). Based on the general agreement of the numerous observations of his experiments, Bartlett argues that cognitive processes do not "abide" by our expectations or predictions, since in remembering, literal recall was *always rare,* and in recognition, comparison and judgment were *rare* too; even when "favorable conditions" in perception are provided, "[…] listening, seeing, observing, and specific attitudes are subject to change and check" (194).

The adaptation of Bartlett's (1932) experimental results and theory of remembering in the present thesis could help expand the rather limited ways of looking at "blindness" phenomena and could possibly account for the hitherto insufficient explanation of the phenomenon, pointed out in Chapter 2. The two basic arguments of CB (i.e. low detection rates and confabulated arguments, and homogeneity for both types of reports) are undoubtedly indicative experimental observations of choice manipulation; however, when assessed under the prism of phenomenology and cognitive semiotics, their discourse against the reliability of introspection and lack of choice awareness could be argued to be grounded on a rather "monodimensional" perspective. "Confabulation", as always present in CB research (Chapter 2, Section 2.6), depicts participants as passive agents who "fabricate" arguments to justify choices they did not make, since they are unaware of their interior motives and thoughts: they lack introspective awareness. Yet, when the complex ways of perception and remembering are considered, this approach seems problematic: if remembering is a reflexive process that allows us to build up its characteristics afresh in order to aid the demands of the moment (Bartlett 1932: 196), why could not this be done to justify a suggested, manipulated choice?

Participants were asked to respond to the assigned task and in order to satisfy that need, they motivated "choices" they did not make. These kinds of responses, however, should not necessarily be considered to be fabricated, and in this sense, untrue, or false, but rather part of each individual's selfhood, possibly resulting from reflections on who they *would* have been if they had indeed made that choice. In their effort to respond adequately to what was expected from them (while being under the influence of social interaction), participants have adapted the initial question ("why did you choose this one?") to "why would you have chosen it?", thinking about how they could be different if they were to act in a certain way (Sokolowski 1990: 180). The intertwined basic acts of consciousness (Chapter 2, Section 2.4.2.) may have provided the flexibility of a *fuller* perception of both the intended "object" and the perceiver's identity that were developed together, allowing participants to discover new ways of experiencing both things and themselves. As Sokolowski (1990) puts it, "a choice … allows my future, imagined self, as I project myself now, to become my actual self" (181). Hence, participants could have projected their future self to the present situation, casting around for features consistent to the sedimented structures of their past experience, and as a result, express explanations that accorded with their selfhood.

During the choice task, participants were assessing criteria important to them, deliberating on alternative choices, while being at the same time prone to find ways to attain the "truth", and to choose the "best", as it was temporarily presented to them (Chapter 2, Section 2.5). Surely, some of them were "blind" to manipulation, since they did not notice the switch or objected to the manipulated choice. However, even when they "confabulated", they were arguably subjected to their personal quest for reason and truth in the specific situation they were facing, which turns the "fictitiousness" of their responses to the "text that … various forms of knowledge attempt to translate into precise language" (Merleau-Ponty 2012: 1xxxii). Driven by empathy and veracity, participants attempted to be as truthful as possible. Thus as "agents of truth" (Chapter 2, Section 2.5.2.) participants could have provided motivations to manipulated choices as a way to adhere to what is best, since "freedom is wanting what is truly good, not imposing what we want" (Sokolowski 1990: 27). The way they tried to cover the "missing links" between what they chose and what was presented to them demonstrates the way they related to them, constituting their identity "in a dialectic of sedimentation and innovation" (Kenzo 2009: 66).

5.6. Summary

This chapter discussed the results of the study in line with the adopted cognitive semiotic and phenomenological approach, arguing that within the wide range of consciousness, intentional acts occur under our explicit or implicit awareness. First, the role of memory in detection was presented, linking it to the two levels of choice-making (Section 5.2). Then the role of the second-person perspective in the expression of detection was discussed (Subsection 5.2.1). Following the hypotheses, the role of affectivity (and pictoriality) (5.3), and consequence (5.4) in detection were addressed, leading to the re-examination of the notion of "confabulation" in participants' responses of *Acceptance* (5.5).

· C H A P T E R 6 ·

Are zombies possible? They're not just possible, they're actual. We're all zombies. Nobody is conscious.

Daniel Dennett

As we navigate our lives, we normally allow ourselves to be guided by impressions and feelings, and the confidence we have in our intuitive beliefs and preferences is usually *justified*. But not always. We are often confident even when we are wrong, and an objective observer is more likely to detect our errors than we are.

Daniel Kahneman

6. CONCLUSIONS AND FUTURE RESEARCH

Through the lens of cognitive semiotics, this thesis examined the phenomena of choice awareness and manipulation blindness, a more adequate term for what is known in the literature as "choice blindness". It aimed to provide a richer conception of these phenomena: one that would not dichotomise between conscious and unconscious, intuition and observation, and rather contribute to being as truthful as possible. In order to examine manipulation blindness as an "indicator" of conscious awareness of choice, the factors of memory, consequence, and affectivity were examined, implying that if these factors were found to influence the detection of manipulation, then we could argue for different degrees of choice awareness.

The **first research question** concerned whether memory for choice plays a significant role in manipulation blindness. It was expected that participants' detection of manipulation would be higher for the choices they remember making than for those they did not, which indeed was the case for the majority of detections. Moreover, the interpretation of the results in regards to memory and detection suggested that memory, with its different ways of remembering (implicit/explicit), influenced radically the *expression* of detection: the more explicitly participants remembered making a choice, the clearer their response was, becoming more hesitant and uncertain for the non-remembered choices. This pattern was parallel to the proposed two-level model of choice-making, my theoretical contribution to the thesis. In short, the lower level of operative intentionality accounts for the more spontaneous and implicit choices; and the higher level of categorial intuition for the more deliberate ones. Furthermore, the specifics of social interaction (as shown by the adopted 2nd-person perspective methodology) was identified as a key factor in detection: empathy, authority, "ethics" (in the sense of responsibility toward the other), and the intersubjective manner of our being in the world were all essential in deciding whether and how participants expressed the detection of choice manipulation.

The significance of social interaction in choice manipulation blindness should be addressed in future research in a wider range of contexts. By adopting, for example, both an authoritative and an empathetic approach, their (different) influence on detection could be tested for a fuller conception of the phenomenon. A related limitation of the current experiment, and potentially of all manipulation blindness experiments, is the way

detection is "measured", since detection would seem to require more implicit methods than what have been used so far (Fazio & Olson 2003). As shown in Chapters 4 and 5, detection involves verbal responses, but also a wide range of gestures, facial expressions, intonation, pauses, etc. The ways these elements could be evaluated in order to constitute a more complete framework of measuring detection is a topic for the future.

The **second research question** examined whether consequence of choice would affect remembering and detection of manipulation. Although the results do not suggest that consequentiality had a large influence on detection, the way consequence was studied as a factor in the experiment, was not sufficient to draw firm conclusions. This is because it was assumed that participants would engage with the different instructions of the tasks (more/less consequential) and make their choices by imagining or placing themselves in hypothetical scenarios, which is not something that could be controlled for. Thus, a future study could focus on more effective ways for testing the role of consequentiality for choice memory and manipulation detection.

The **third and final research question** enquired about the role of affectivity in recall and detection, which was shown to be a significant factor in explaining the results. The stimuli presumed to have higher affective valance, the photos of the human faces, where also those that were more pictorial. Thus, we may conclude that affectivity and pictorial consciousness assisted participants in assessing the stimuli through the pre-existing "settings" of their actual experiences. If participants lacked these, they tended to try and attribute value to what was at first rather meaningless to them, influencing detection accordingly. In future research these two factors – affectivity and pictoriality – could be decupled in order to be examined separately to check which one and in what way they influence detection.

The methodological approach of first, second and third-person perspective method triangulation adopted by this thesis exemplifies the way in which the experimental observations could come to contribute to theoretical concepts like choice and memory, furthering them to become richer by means of the conceptual-empirical loop of cognitive semiotics. In combination with the phenomenological approach, triangulation provided the ground that explicated basic acts of consciousness (perception, remembering, imagination) in their interconnection, in contrast with the understandings of these cognitive processes in terms of mechanisms and algorithms within standard cognitive science. By broadening the spectrum of the latter, which regards "blindness" as a normal part of human cognition and participants as ignorant decision makers, to the pluralistic objectivity of first, second, and third person perspectives, a more ampler conception of the phenomenon of choice may be obtained. This approach acknowledges the occasional "blindness" to manipulation as a phenomenon that occurs under the influence of a number of factors, and, on this basis, it suggests the re-examination of the conception of participants as unreliable beings that confabulate arguments. It rather proposes to regard them, i.e. *us,* as conscious agents with different degrees of choice awareness. Even if, in the full range of our actions, we fail to be "truthful", we are still prone to achieve it due to our nature of beings with empathy and veracity.

Thus, the fundamental concepts of cognitive semiotics (e.g. embodiment, empathy, intersubjectivity, etc.) should be valued as instruments in understanding our (complex ways of) being in the world, and as a way to enrich rather narrow contemporary systems of thought, which seem to dictate the social imperatives of out times.

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· A p p e n d i x ·

APPENDIX I. Stimuli pairs: Human faces & abstract figures
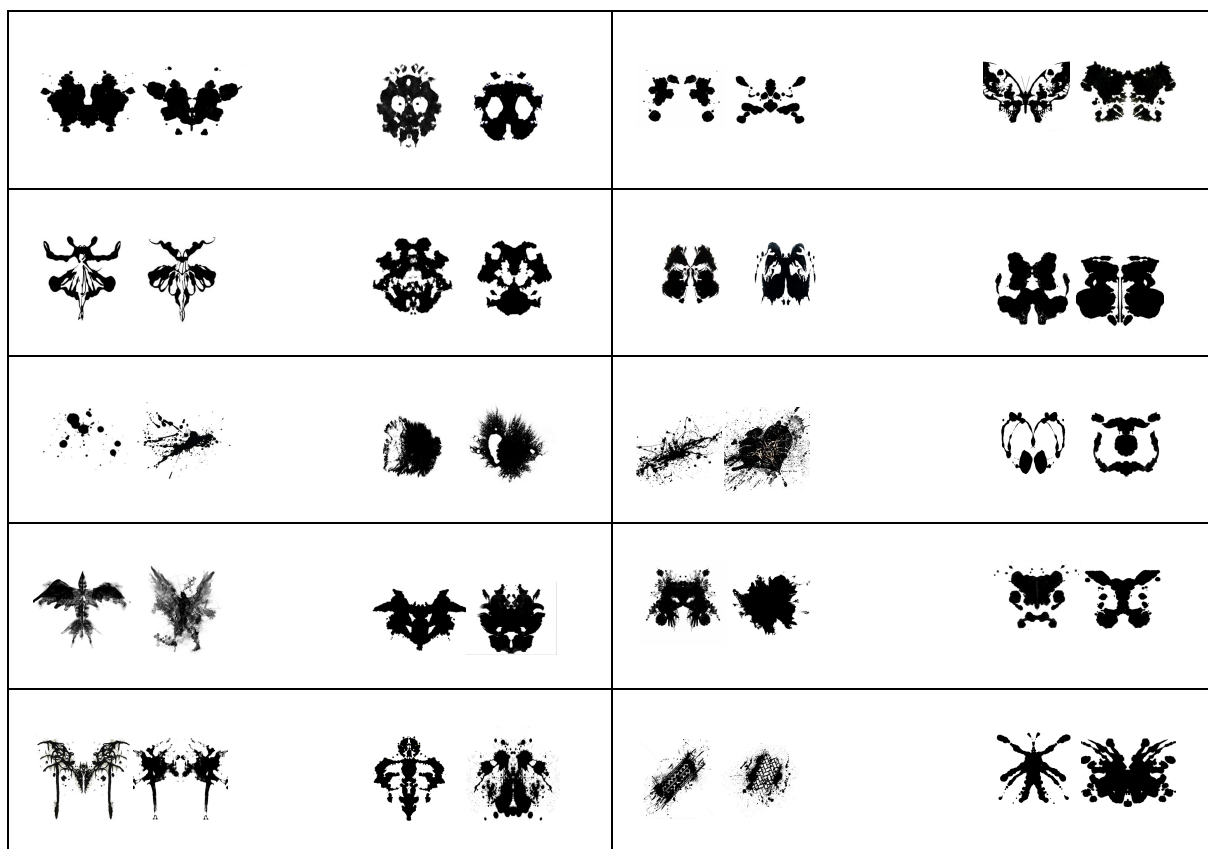
APPENDIX II. Informed consent

CONSENT FOR PARTICIPATION IN RESEARCH

I volunteer to participate in a research project conducted by Alexandra Mouratidou from Lund University. I understand that the project is designed to gather information about academic work of a MA's thesis that falls in the specialization of Cognitive Semiotics. I will be one of approximately 40 people that participate in this research.

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty.

2. I understand that the participation involves a choice task and an interview session at the end of the experiment. If, however, I feel uncomfortable in any way during the task or the interview, I have the right to end the task, or decline to answer any question.

3. Participation involves being subject to a test by a student/researcher which last approximately 60 minutes. A video recording of my participation will take place for the sake of further analysis. It will be kept strictly confidential, and may only be shown to the student's supervisors.

4. I understand that the researcher will not identify me by name in any reports using information obtained from this experiment, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

5. I understand that this research study has been reviewed and approved by the supervisors of the researcher, namely, Jordan Zlatev and Joost van de Wejier: Center for Language and Literature, Lund University.

6. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

7. I have been given a copy of this consent form.

_____   _____

My Signature   Date

_____   _____

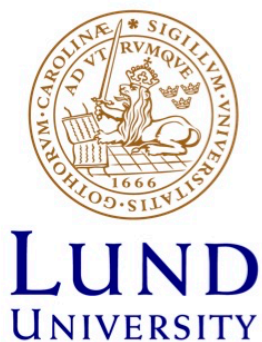My Printed Name   Signature of the Researcher

For further information, please contact:

Alexandra Mouratidou, alexandra_mour@yahooo.com

Prof. Jordan Zlatev jordan.zlatev@semiotik.lu.se

Thank-You Note

/   /2018

Many thanks to_____ for participating in the experiment conducted by Alexandra Mouratidou of Lund University for the collection of data for a MA's thesis that falls in the specialization of Cognitive Semiotics.

Sincerely,
Alexandra Mouratidou

EXPERIMENT INSTRUCTIONS

Thank you for agreeing to be part of this study. You are about to participate in a choice-making experiment involving memory and at the end of the session you will be awarded with a thank-you note and feedback on your performance. There is no time limit, but the overall procedure is estimated to take roughly 60 minutes. Please remember to turn off your cell phone. If you have a question or problem at any point during the experiment, please feel free to voice it.

GROUP 1(a)

The experiment will consist of two parts. In each part you will be shown a different type of pictures, and you will make your choice based on a different question. Each part has four steps. You are allowed to talk during the whole procedure, and if anything is unclear at any point of the task, please feel free to say so. A short break will take place between the two parts.

PART 1:

Question: "Who do you find more attractive"?

You will be presented with 20 pairs of pictures of male and female faces. For each pair you need to show with your index finger the one you find more attractive (Step 1). Once you are done, some randomly selected choices of yours will be presented to you and you will be asked to confirm them as such (Step 2); in case you are unsure, you can make a guess. Following, you will watch a very short film of roughly 5 minutes (Step 3). Finally, you will view the initial pairs of pictures and you will be asked to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included in the total 20.

SHORT BREAK (optional)

PART 2:

Question: "If you were to get an ink tattoo, which of the figures would you choose?"

You will be subject to the same procedure as in the first part, only this time you will be presented with 20 pairs of photos of abstract figures and you will be asked to choose the one you would pick if you were to get an ink tattoo. Again, for each pair you need to show with your index the one you prefer (Step 1). Once you are done, some randomly selected choices of yours will be shown to you and you will be asked to confirm them as such; in case you are unsure, you can make a guess (Step 2). Following you will watch a very short film of roughly 5 minutes (Step 3). Finally, you will view again all of the initial pairs of pictures and you will be asked to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included in the total 20.

DEBRIEFING:

After the tasks are completed you will be asked a few questions about your experience in participating in the experiment and you will have the chance to raise any questions or concerns.

 Relax and enjoy the process!

Thank you for agreeing to be part of this study. You are about to participate in a choice-making experiment involving memory and at the end of the session you will be awarded with a thank-you note and feedback on your performance. There is no time limit, but the overall procedure is estimated to take roughly 60 minutes. Please remember to turn off your cell phone. If you have a question or problem at any point during the experiment, please feel free to voice it.

GROUP 1(b)

The experiment will consist of two parts. In each part you will be shown a different type of pictures, and you will make your choice based on a different question. Each part has four steps. You are allowed to talk during the whole procedure, and if anything is unclear at any point of the task, please feel free to say so. A short break will take place between the two parts.

PART 1:

Question: "If you were to get an ink tattoo, which of the figures would you choose?"

You will be subject to the same procedure as in the first part, only this time you will be presented with 20 pairs of photos of abstract figures and you will be asked to choose the one you would pick if you were to get an ink tattoo. Again, for each pair you need to show with your index the one you prefer (Step 1). Once you are done, some randomly selected choices of yours will be shown to you and you will be asked to confirm them as such; in case you are unsure, you can make a guess (Step 2). Following you will watch a very short film of roughly 5 minutes (Step 3). Finally, you will view again all of the initial pairs of pictures and you will be asked to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included in the total 20.

SHORT BREAK (optional)

PART 2:

Question: "Who do you find more attractive"?

You will be presented with 20 pairs of pictures of male and female faces. For each pair you need to show with your index finger the one you find more attractive (Step 1). Once you are done, some randomly selected choices of yours will be presented to you and you will be asked to confirm them as such (Step 2); in case you are unsure, you can make a guess. Following, you will watch a very short film of roughly 5 minutes (Step 3). Finally, you will view the initial pairs of pictures and you will be asked to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included in the total 20.

DEBRIEFING:

After the tasks are completed you will be asked a few questions about your experience in participating in the experiment and you will have the chance to raise any questions or concerns.

Relax and enjoy the process!

Thank you for agreeing to be part of this study. You are about to participate in a choice-making experiment involving memory and at the end of the session you will be awarded with a thank-you note and feedback on your performance. There is no time limit, but the overall procedure is estimated to take roughly 60 minutes. Please remember to turn off your cell phone. If you have a question or problem at any point during the experiment, please feel free to voice it.

GROUP 2(a)

The experiment will consist of two parts. In each part you will be shown a different type of pictures and you will be asked to make your choice based on a different question. Each part has four steps. You are allowed to talk during the whole procedure, and if anything is unclear at any point of the task, please feel free to say so. A short break will take place between the two parts.

PART 1:

Question: "Which figure do you find more aesthetically pleasing?"

You will be presented with 20 pairs of pictures of abstract figures. For each pair you need to show with your index finger the one you find more aesthetically pleasing (Step 1). Once you are done, some randomly selected choices of yours will be presented to you and you will be asked to confirm them as such (Step 2); in case you are unsure, you can make a guess. Following you will watch a very short film of roughly 5 minutes (Step 3). Finally, you will view the initial pairs of pictures and you will be asked you to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included to the total 20.

SHORT BREAK (optional)

PART 2:

Question: "If you were to be on a deserted island and could only take one person with you, who would you choose?

You will be subject to the same procedure as in the first part, only this time you will be asked to choose between 20 pairs of photos of male and female faces the one you would take with you if you were on a desert island. Again, for each pair you need to show with your index the one you prefer (Step 1). Once you are done, some randomly selected choices of yours will be presented to you and you will be asked to confirm them as such; in case you are unsure, you can make a guess (Step 2). Following you will watch a very short film of roughly 5 minutes (Step 3).Finally, you will view again all of the initial pairs of pictures and you will be asked you to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included to the total 20.

DEBRIEFING:

After the tasks are completed you will be asked a few questions about your experience in participating in the experiment and you will have the chance to raise any questions or concerns.

Relax and enjoy the process!

Thank you for agreeing to be part of this study. You are about to participate in a choice-making experiment involving memory and at the end of the session you will be awarded with a thank-you note and feedback on your performance. There is no time limit, but the overall procedure is estimated to take roughly 60 minutes. Please remember to turn off your cell phone. If you have a question or problem at any point during the experiment, please feel free to voice it.

GROUP 2(b)

The experiment will consist of two parts. In each part you will be shown a different type of pictures and you will be asked to make your choice based on a different question. Each part has four steps. You are allowed to talk during the whole procedure, and if anything is unclear at any point of the task, please feel free to say so. A short break will take place between the two parts.

PART 1:

Question: "If you were to be on a deserted island and could only take one person with you, who would you choose?

You will be subject to the same procedure as in the first part, only this time you will be asked to choose between 20 pairs of photos of male and female faces the one you would take with you if you were on a desert island. Again, for each pair you need to show with your index the one you prefer (Step 1). Once you are done, some randomly selected choices of yours will be presented to you and you will be asked to confirm them as such; in case you are unsure, you can make a guess (Step 2). Following you will watch a very short film of roughly 5 minutes (Step 3). Finally, you will view again all of the initial pairs of pictures and you will be asked you to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included to the total 20.

SHORT BREAK (optional)

PART 2:

Question: "Which figure do you find more aesthetically pleasing?"

You will be presented with 20 pairs of pictures of abstract figures. For each pair you need to show with your index finger the one you find more aesthetically pleasing (Step 1). Once you are done, some randomly selected choices of yours will be presented to you and you will be asked to confirm them as such (Step 2); in case you are unsure, you can make a guess. Following you will watch a very short film of roughly 5 minutes (Step 3). Finally, you will view the initial pairs of pictures and you will be asked you to motivate your choices (i.e. to say why did you chose the one you did) (Step 4). You can take as much time as you need in order to decide upon your choices, view them, and/or provide the motivations for them. The first three picture-pairs that will be presented to you are for practice, in order to familiarize you with the task, and are not included to the total 20.

DEBRIEFING:

After the tasks are completed you will be asked a few questions about your experience in participating in the experiment and you will have the chance to raise any questions or concerns.

Relax and enjoy the process!