

***Conceptual Disagreements in the Psychology of Memory: Reverse Engineering  
“Autobiographical Memory”******Desacordos Conceituais na Psicologia da Memória: A Engenharia Reversa do  
conceito de “Memória Autobiográfica”*****Gabriel Zaccaro<sup>1,2</sup>**

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**ABSTRACT**

Philosophical work is usually dependent on mutual conceptual understanding. However, it is common to have disagreements about the precise meaning of certain concepts. Therefore, philosophical work on the clarification of concepts can be useful to avoid terminological confusion. Here I intend to give a first step in the direction of a clarification of the concept of “autobiographical memory” by utilizing the method of “reverse engineering” or “conceptual genealogy” (Thomasson, 2020). This method reveals that there is a disagreement in the psychological literature regarding the concept of “autobiographical memory”. More specifically, I show that this disagreement stems from differences in content within the conceptions of “autobiographical memory” used by Tulving and Conway. These differences can be spelled out in terms of a difference in phenomenology, type of self-reference, and type of content. Here I take as an underlying notion that clarifying these differences is important because it can help us avoid terminological and conceptual confusion.

**Keywords:** autobiographical memory. episodic memory. conceptual engineering. reverse engineering. conceptual genealogy.

**RESUMO**

O trabalho filosófico geralmente depende do entendimento conceitual mútuo. Contudo, é comum haver desacordos sobre o significado de certos conceitos. Portanto, o trabalho filosófico que clarifica conceitos pode ser útil para evitar confusão terminológica. Aqui pretendo dar um primeiro passo em direção a clarificação do con-

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ceito de “memória autobiográfica” utilizando o método da “engenharia reversa” ou “genealogia conceitual” (Thomasson, 2020). Esse método nos revela que existe um desacordo na literatura psicológica no que diz respeito ao conceito de “memória autobiográfica”. Mais especificamente, eu mostro que esse desacordo se origina de diferenças em conteúdo dentro das concepções de “memória autobiográfica” utilizadas por Tulving e Conway. Essas diferenças podem ser descritas em termos de uma diferença de fenomenologia, de tipo de autorreferência, e tipo de conteúdo. Aqui eu parto do pressuposto de que clarificar essas diferenças é importante pois pode nos ajudar a evitar confusões conceituais e terminológicas.

**Palavras-chave:** memória autobiográfica. memória episódica. engenharia conceitual. engenharia reversa. genealogia conceitual

## INTRODUCTION

The term “autobiographical memory” figures in the psychological literature as an important term to classify a specific variety of memory. The term groups occurrences in which an individual remembers and can access different events from his past being, thus, aware of his autobiography (Conway, 1996; Conway; Bekerian, 1987; Conway; Rubin, 1993). A similar concept is that of “episodic memory” (Tulving, 1972). However, episodic memories are taken to be instances in which one remembers specific episodes from his past with a characteristic phenomenal experience of *mental time travel* (Michealian, 2016; Tulving, 1985). The concept of “episodic memory”, as opposed to the concept of “autobiographical memory”, has been used in investigations that are not centered only in the field of psychology but in philosophy as well<sup>3</sup>. Although the concept of “autobiographical memory” does not figure as frequently in the philosophical literature on memory, if one takes a naturalistic approach to philosophical work, it is a concept that one is inevitably going to come across, for it is common in psychological empirical research.

The problem is that for someone who works on memory research, be it philosophical or psychological, the distinctions between those two terms are not always made explicit by the authors who use them. As a consequence we have interpretations in which the two concepts are used interchangeably (Bermúdez, 2017; McCarroll, 2018; McCarthy; Warrington, 1990; Tulving, 1972), while other defend that

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<sup>3</sup> A good introduction on the diversity of taxonomies used to categorize different types of memory can be found on section two in the entry “Memory” from the Stanford Encyclopedia of Philosophy (MICHAELIAN; SUTTON, 2017).

they are still significantly different and should not be used interchangeably (Conway, 1996). Baddeley, for instance, shared his concerns on the topic:

In general, I tend to be unsympathetic to discussions of the meanings of words, since very frequently lack of precision is beneficial, as in the case of the term 'cognitive psychology'. [...] In the case of the term 'autobiographical memory' however, I think the lack of agreement about definition reflects a lack of cohesion, and possibly clarity in the field itself, which is not good either for its development, or its perception by colleagues outside the area. (Baddeley, 1992, p. 14)

[...] While I would accept the importance of separately conceptualising some system such as episodic memory, and agree that it is related to personal experience, I would not favour referring to it as autobiographical memory. Such usage is inconsistent with many existing usages of the term to refer to "remembering" or "knowing" the facts of one's life, and in addition is potentially misleading in applying the label to the recall of material that would not typically be regarded as autobiographical. The term autobiographical memory has not been used widely in this sense in the past; to adopt it at this stage would simply lead to yet further terminological confusion. (Baddeley, 1992, p. 16)

Given the possible scenario of conceptual confusion, one task the philosopher might engage in is the clarification of the uses the concept has had in the literature. A philosopher, given that scenario, can take either a *descriptive* or a *prescriptive* approach. For instance, Goldman (1989) based on Strawson's *Individuals* (1959), distinguishes between descriptive and prescriptive metaphysics and argues that the former is concerned with exposing or "laying bare" our understanding of the world, or our *folk ontology*<sup>4</sup>. The latter, however, is related to creating a better structure or deciding which ontological commitments we *should* adopt according to the best evidence available.

## 1. CONCEPTUAL ENGINEERING AND REVERSE ENGINEERING

In this section, I present the methodology of *conceptual engineering* which will guide my analysis of the different meanings of the term "autobiographical memory". One of the first steps for someone who undertakes a conceptual engineering task is to analyze the semantic role that a given term has in a given research area.

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<sup>4</sup> Folk ontology means the way people that follow common sense understand and think about the structure of the world.

Conceptual engineering can also be considered a first step in the direction of a prescriptive metaphysical task of conceptual ethics, that is, it might enable the philosopher to evaluate whether the way we use a given concept is appropriate for the type of research intended (Belleri, 2022). The goal of someone who enters an investigation of the latter type is to respond to the question: “How *should* we use this term?” This question can be guided by many factors, but often it has to do with “resolving ambiguity, precisifying a vague term, setting a contextual parameter, or in any other way determining how some antecedently indeterminate matter of meaning should be settled” (Plunkett; Sundell, 2013).

Here, I will focus on delineating the problems of conceptual clarity related to the concept of “autobiographical memory”. My aim here is not to engage in a prescriptive task of changing the concepts at hand but rather to make explicit to those who engage in the literature on memory different ways of using the concept of “autobiographical memory”. More specifically, I will focus on what Thomasson calls “reverse engineering” or “conceptual genealogy” which she considers the first step for conceptual engineering:

[...] before removing a piece of a car engine, lines in a software program, or an organ from the body, it is always a good idea to begin with reverse engineering: working out what the part does for the engine, program, or organism as a whole. Thus, in conceptual engineering as it is (to be) practiced in philosophy, we must often begin not with simple constructive conceptual engineering, but rather with ‘reverse engineering’. (Thomasson, 2020, p. 447)

Reverse engineering in normative work is, therefore, a primarily descriptive process which concerns the historical uses of a given term. It serves as a tool for helping us to better conceive the context in which a certain term has been introduced and the reason why it was introduced. Reverse engineering is often interrelated with the methodology of conceptual ethics and conceptual engineering. Plunkett (2016) delineates a useful distinction between conceptual analysis (reverse engineering) and conceptual ethics by stating that the former is a useful first step to be successful in the latter.

Conceptual analysis, as I am understanding it, is distinguished from conceptual ethics in the following basic way: the former is about a descriptive issue (e.g., what is the content of the concept *objecti-*

vity?) and the latter is about a normative issue (e.g., should I be using the concept *objectivity* for doing work in the natural sciences?) (Plunkett, 2016, p. 50)

Plunkett suggests that reverse engineering is a descriptive step of analyzing the content of a given concept that precedes a possible further prescriptive task of evaluating one's ethical stance regarding the use of such concept. Conceptual ethics, as a way of interpreting a certain dispute as a dispute about a normative issue regarding the uses of the concept throughout the literature, frequently depends on the notion of a *disagreement* which is fundamental for this article. Here I endorse a specific notion of disagreement which centers on the idea of a difference or incompatibility in content between interlocutors. This is what it is called the principle of DRCC (Disagreement Requires Conflict in Content), and it is summarized in the following way:

*Disagreement Requires Conflict in Content (DRCC):* If two subjects A and B disagree with each other, then there are some objects p and q (propositions, plans, etc.) such that A accepts p and B accepts q, and p is such that the demands placed on a subject in virtue of accepting it are rationally incompatible with the demands placed on a subject in virtue of accepting q. (Perhaps, though not necessarily, in virtue of q entailing not-p.) (Plunkett; Sundell, 2013, p. 11)

This notion of disagreement is adequate for my purposes because it can better explain what is common between disagreements brought by linguistic exchanges as well as in those that are not explicitly voiced. Given that many disagreements can be tacit in the literature, this notion of disagreement is useful for it is able to account for conceptual disagreements that are mostly implicit. In this way, I agree with the idea that a disagreement is “a *state* that obtains, rather than an activity people engage in” (Plunkett; Sundell, 2013, p. 10). This notion allows us to consider instances where conceptual differences are not necessarily explicitly on the literature but derive from tacit divergences in the meaning of a concept by different authors.

Also, following Thomasson and Plunkett, here I take as an underlying rule that more conservative measures should precede more invasive procedures such as prescribing a new way to use a term. Thomasson (2020), basing herself on Gert *et al.* (2006), argues that conceptual work should always prize conservative solutions

instead of more radical ones. Since we cannot be sure that the proposed revision of a concept would work in all dimensions in which a concept is used, avoiding conceptual prescription when one cannot be sure about the positive effects of the conceptual change is preferable. Thus, given that conceptual change can have impacts outside the field in which the concept in question is being considered, Thomasson argues that we should take caution and “be responsive to the inferential connections between the term in question (which we are considering revising or eliminating) and our other terms and broader practices” (2020, p. 454). Taking that to be a guiding principle that applies even to tasks outside the prescriptive dimension, I believe that my aim to focus my investigations on the conceptual analysis is justified, for I cannot be sure that trying to resolve the dispute related to the term “autobiographical memory” would be necessarily beneficial.

## 2. CURRENT TAXONOMY

Endel Tulving, in 1972, proposed the division of long-term memory into *episodic* memory and *semantic* memory (Tulving, 1972). In a nutshell, long-term memory is the type of memory that is retained for long periods of time. It is contrasted with short-term memories, which are those whose duration of conscious access is limited to a few seconds or minutes (e.g., remembering a phone number or a street address). In long-term memory, the individual is aware of its content for long periods and can report it verbally (Squire, 2009).

Roughly, episodic memories are the instances in which the subject represents an episode from his past (e.g., remembering one’s childhood birthday party) with a phenomenal experience of reliving that episode. Episodic memories are very often correlated with imagistic content, in the sense that their representations involve quasi-perceptual experiences, that is, experiences that resemble the experience the subject went through during the original experience of the event (Berryhill *et al.*, 2007; Byrne; Becker; Burgess, 2007; Gelbard-Sagiv *et al.*, 2008; Laeng *et al.*, 2014; Nanay, 2021; Perrin, 2021; Wheeler; Petersen; Buckner, 2000)<sup>5</sup>. Semantic me-

<sup>5</sup> By imagistic, I mean something that has “mental imagery”. It is worth clarifying that “mental imagery” is not related only to visual imagery, but it is related to every type of human sensation. Mental imageries can also be olfactory, auditory, gustative, tactile, or proprioceptive. Also, it is not something that is restricted to perception alone, but to a myriad of other mental states such as “memory, emotions, language, desires and action-execution.” (Nanay, 2021).

mories, on the other hand, are memories in which the content can be described as purely propositional or conceptual (Anderson, 1974; Collins; Loftus, 1975; Collins; Quillian, 1969; Jones; Willits; Dennis, 2015; Tulving, 1984), like remembering that “Napoleon lost the battle of Waterloo” or that “A canary can fly”, for instance.

The widespread use of this taxonomy can be explained because it makes a clear and useful distinction between, on the one hand, present representations of *perceptually experienced episodes* from the past, and on the other, present representations of *knowledge* learned in the past (Michaelian; Sutton, 2017; Tulving, 1985, 2001a). Also, it is justified for it represents empirically observed differences between the remembrance of past episodes and the remembrance of knowledge, acquired from the study of amnesiac patients (e.g., Rosenbaum *et al.*, 2005, 2009; Tulving, 1985). However, it is due to note that how we use the concepts of “episodic memory” and “semantic memory” has drastically changed since Tulving’s first proposal of them (Tulving, 2002a).

Initially Tulving regarded the difference between “episodic memory” and “semantic memory” to be majorly a difference in content (Cheng; Werning, 2016; Michaelian; Sutton, 2017; Tulving, 1972). Whereas semantic memory stores linguistic and conceptual information derived from a cognitive reference of the input signals, episodic memory stores the perceptual properties and attributes of experience in terms of an autobiographical reference to other episodic stored contents (Tulving, 1972, p. 385-386). However, Tulving improved his taxonomy by sketching another way of distinguishing episodic from semantic memory via its phenomenological character. This turn is in part due to his study of the amnesiac patient K.C., treated in what follows.

## 2.2 The case of patient K.C.

Important for the reverse engineering task intended here is to understand the reason why certain concepts came to have the content they have. Concerning the concept of “episodic memory” the case of patient K.C. was of fundamental importance for Tulving, for it was responsible for his awareness that the concept of “episodic memory” was closely related to a phenomenological dimension. Through



the study of patient K.C., Tulving exchanged his content-difference approach for a phenomenological-difference approach, which is still widely used<sup>6</sup>.

K.C. was left both anterogradely and retrogradely amnesiac, due to a serious motorcycle accident<sup>7</sup>. However, Tulving (1985) noticed that K.C. was still quite capable of retaining and remembering factual information, including factual information about his past. Confusing as this may sound, the difference here is that K.C. could not remember in the episodic sense, *i.e.*, he could not reexperience imaginatively his past, but he could remember in the semantic sense, *i.e.*, he could recall propositional information about his past (Rosenbaum *et al.*, 2005, 2009). K.C. could, for instance, remember facts such as “what year the family moved into the house where they live now, the names of the schools he went to or where he spent his summers in his teens” (Tulving, 1985, p. 4)<sup>8</sup>. He could not, however, remember episodically anyone of those events, meaning that he could not mentally relive those experiences.

Patient K.C.’s case was of fundamental importance for memory research because it marked a turn in the classification of types of memory within the Tulvingian framework. That is, beginning in K.C.’s case episodic memories were not distinguished from semantic memories because of their content, but rather by the type of consciousness employed by each mental state (Tulving, 2002a). This is because Tulving noted that K.C. was able to remember facts about the world and he was aware of his knowledge, but he was unable to experience extended time subjectively.

The case led Tulving to hypothesize that the difference between these two types of memory could be the type of phenomenological experience that each

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<sup>6</sup> In sum, *content-based* approaches try to classify memory regarding their respective contents, be it first or second order content (Michaelian; Sutton, 2017). Tulving’s distinction in 1972 could be seen as specifying that whereas semantic memories had propositional or factual content, episodic memories had what became known as WWW (what-where-when) information (Cheng; Werning, 2016; Cheng; Werning; Suddendorf, 2016; Griffiths; Dickinson; Clayton, 1999; Suddendorf; Busby, 2003). However, as we shall see, Tulving specified other criteria such as the type of reference. Whereas semantic memories make a *cognitive* reference, episodic memories make an *autobiographical* reference. *Phenomenological-based* approaches, the subject of next subsection differentiates types of memories according to the type of consciousness they present.

<sup>7</sup> Anterograde amnesia refers to the inability to encode new experiences, whereas retrograde amnesia refers to the inability one has to access information stored before the amnesia-inducing brain damage.

<sup>8</sup> It is important to note that dissenting voices have emerged relating to the statement that K.C.’s factual remembering capacities were *intact* (see for instance DE Brigard, 2023). These tend to argue that, in fact, K.C.’s semantic memory abilities were also compromised, which would put into question Tulving’s distinction between semantic and episodic memory as two separate and dissociable memory systems.



mental state employed (Tulving, 1985). Thus, he dubbed “noetically conscious” beings that were aware of the knowledge they possessed and that could act upon objects, events, and their relation, without their presence. And he dubbed “auto-noetically conscious” beings that were aware of the represented episode as a part of their past. K.C. was aware in the noetic sense, but he was not aware in the auto-noetic sense (Tulving, 1985, p. 4-5).

So, from this point forward the Tulvingian taxonomy differentiated episodic memory from semantic memory by the type of consciousness that was employed in each kind of mental state, being episodic memory responsible for auto-noetic representations of the past and semantic memory responsible for noetic representations of present knowledge (Michaelian; Sutton, 2017; Tulving, 2002a). It is also important to note that this change was in part driven by Tulving’s awareness of the insufficiency of a purely content-based approach (Wheeler; Stuss; Tulving, 1997). That is because it is not impossible to conceive of a semantic memory that had purely propositional content but that satisfied the type of what-where-when information needed to classify it as an episodic memory (Cheng; Werning, 2016; Michaelian; Sutton, 2017). That is, in a content-based approach it would be difficult to differentiate between a memory of an episode that represented object O in location L in time T, and a memory from acquired semantic knowledge that represented the same O, L, and T information (Wheeler; Stuss; Tulving, 1997, p. 332). It seemed that the latter type of representation lacked something to be considered episodic, namely, a type of awareness of the past experience. That was the type of awareness that was lacking in patient K.C. and that was the reason why he could not relive the episodes from his past.

In the specific case of the designation “autobiographical memory” within the Tulvingian taxonomy, however, this concept lost a bit of its purpose. We could think that this happened because the psychological studies of the time were not interested in investigating matters at the level of a narrative. Rather, the objective was to empirically distinguish between two types of mnemonic mental states that were produced by two dissociable memory systems<sup>9</sup>. As a result, the concept of “auto-

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<sup>9</sup> Here a memory system is understood as the neurological processes that give rise to a certain type of mental representation. Being dissociable would mean that two memory systems are in a large sense independent of one another. This means that disruption in the functioning of one memory system does not affect the other. However, in Tulving’s conception, despite being dissociable semantic and episodic memory are still in a sense interdependent, for they stand in a hierarchical relation in what pertains to encoding (Tulving, 2001b).

biographical memory” meant no more than a synonym for “episodic memory”. Further examples of this use are given in the next section.

### 3. THE GENEALOGY OF THE CONCEPT OF “AUTOBIOGRAPHICAL MEMORY”

This section aims to investigate how the concept of “autobiographical memory” was used throughout the psychological literature that extends from the 1970s to the 1990s. Only then I believe we would be ready to understand its multiple uses and the problems derived from such uses. In what follows, I give an overview of the conceptual history of “autobiographical memory”, focusing on two authors: Endel Tulving and Martin Conway.

#### 3.1 Tulving’s use of “autobiographical memory”

In his first presentation of the distinction between semantic and episodic memory, Tulving takes their difference-maker to be their reference. Whereas semantic memories made a *cognitive* reference, episodic memories made an *autobiographical* reference. This can be seen in the following excerpts:

Episodic memory receives and stores information about temporally dated episodes or events, and temporal-spatial relations among these events. A perceptual event can be stored in the episodic system solely in terms of its perceptible properties or attributes, and it is always stored in terms of its autobiographical reference to the already existing contents of the episodic memory store. (Tulving, 1972, p. 385-386)

Inputs into the semantic memory system are always referred to an existing cognitive structure, that is, they always have some cognitive reference, and the information they contain is information about the referent they signify rather than information about the input signal as such. Information stored in the semantic memory system represents objects, [...] concepts, relations quantities, events, facts, propositions, and so on, detached from autobiographical reference. (Tulving, 1972, p. 389)

Within Tulving’s works, this is the first mention of a close relation between the terms “episodic” and “autobiographical”. However, it is worth noting that this

conception does not begin with Tulving. For example, in talking about childhood amnesia in his article “On Memory and Childhood Amnesia”, Schachtel (1947) defines “autobiographical memory” as:

Autobiographical memory - that is the ability for voluntary recall of one's past life - is one of the latest developments in childhood, which is not surprising since it is part of the awareness of self, a capacity found only in man, and even in adult man usually not very well developed. (Schachtel, 1947, p. 15)

Thus, it becomes clear that Schachtel's definition of “autobiographical memory” is very similar to what we define as “episodic memory” nowadays, even concerning the very well-known phenomenon of childhood amnesia<sup>10</sup>. Concomitant with this view of defining “autobiographical memory” as “representing past events” is the development of the concept of “episodic memory” by Endel Tulving in his 1972 article. Tulving himself notes that dubbing this type of mnemonic capacity as “episodic” had some advantages over calling it “autobiographical”, namely, avoiding confusion regarding the understanding of the latter as a “literary account of one's life” (Tulving, 1983, p. 28). Thus, it should come as no surprise that with the development and spreading of the use of the concept of “episodic memory”, the concept of “autobiographical memory” fell into certain disuse within the philosophical and psychological literature on memory, given that Tulving's framework was highly influential on memory search of the time.

However, even though the concept of “autobiographical memory” was not as used, in certain instances it has remained as a kind of synonymic concept to that of “episodic memory” (Baddeley, 1992). This means that it was not a problem for scholars to use the concepts of “episodic memory” and “autobiographical memory” interchangeably (Hoerl, 2007). This can be seen in many passages throughout the literature and is an idea that is used even to this day (e.g., Bermúdez, 2017; Bernecker, 2008; McCarroll, 2018; Schachtel, 1947; Tulving, 1972, 1983). McCarroll, for instance, in his 2018 book *Remembering from the Outside*, says that:

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<sup>10</sup> Childhood amnesia refers to our inability to remember episodes from our early childhood. This is thought to stem from the fact that the neural mechanisms that underlie episodic remembering begin to mature at around the age of 4 (Tulving, 2005).

Throughout this book I use the terms “personal memory”, “episodic memory”, “autobiographical memory”, and “experiential memory” interchangeably. In doing so I refer to memory of personal events or episodes in one’s life. (McCarroll, 2018, p. 2)

The synonymic use by Tulving was noted and commented on by some authors. For instance, Baddeley says that:

Tulving himself suggested that episodic memory was synonymous with autobiographical memory, and at least in his earlier papers suggested that this reflected the operation of a psychologically and neurologically separable subsystem. (Baddeley, 1992, p. 14)

One of the passages that shows this synonymity is when Tulving in his 1989 article “Remembering and Knowing the Past” explicitly affirms that patient K.C. has no autobiographical memory, although he has autobiographical knowledge:

Part of his preserved knowledge is autobiographical: he knows things about himself and his past. But this kind of autobiographical knowledge is impersonal knowledge, to be distinguished from autobiographical memory. (Tulving, 1989, p. 362)

Given the evidence shown before, it is fair to interpret that what Tulving means in this passage is that although K.C. has autobiographical knowledge of his past, he does not have episodic memories. Moreover, when mentioning the tests administered to see the extent of the damage done to K.C.’s brain, he mentions:

The idea was to test his autobiographical memory with increasingly complete cues about the events. [...] The results were clear. Even when he was given full descriptions of the real events, his response was the same as those he gave to the fabricated events: he said he did not remember the events, and did not feel any familiarity toward them. (Tulving, 2005, p. 24)

Therefore, we can see that the term “autobiographical memory” is used by Tulving to refer to “episodic memory” as more or less of a synonym. This is completely understandable once we grasp the idea that the concepts of “episodic memory” and “autobiographical memory” were used interchangeably. Now we turn to another view on the concept of “autobiographical memory”, that of Martin Conway.

### 3.2 Martin Conway's use of "autobiographical memory"

Martin Conway's work on memory, and in particular, autobiographical memory, began in the 1980s. Beginning with his Ph.D. dissertation, in 1984, Conway made relevant discoveries regarding how one comes to remember events given a certain cue. By the end of the 1990s he had published several articles on the topic (e.g., Anderson; Conway, 1993; Conway, 1987, 1996, 1996; Conway *et al.*, 1992, 1999; Conway; Bekerian, 1987; Conway; Collins, 1996; Conway; Dewhurst, 1995; Conway; Rubin, 1993, 1993; Dewhurst; Conway, 1994). Conway gave us good reasons to believe that what he calls an "autobiographical memory" is not only related to the remembrance of specific episodes but that it is also related to the remembrance of general knowledge of our past (Conway, 1996, p. 166)<sup>11</sup>.

In his proposal, instead of being related to a specific type of memory, the term "autobiographical memory" would encompass every instance of remembering that contains some kind of reference to the agent's autobiography, be it of episodic or semantic origin (Conway, 1996, p. 166-167). In Conway's view, propositional autobiographical knowledge (*i.e.*, autobiographical memories of semantic content) would have the function of contextualizing the remembered event in the subject's past (Conway, 1996, p. 166). In his famous Self-Memory System Model (Conway; Pleydell-Pearce, 2000), propositional autobiographical knowledge that contextualizes the episodes one can remember is crucial for our ability to retrieve them. This is because memory retrieval depends on a process of searching for information that corresponds to the cue that triggered the mnemonic experience. This search, as Conway argues, does not always happen directly at the level of events, but rather begins at more general and abstract levels of autobiographical information, which optimizes the search for past events. For instance, when one is asked to remember an episode from that time when you had lunch with person X if the episode is not directly retrieved (*i.e.*, the cue is not sufficiently specific to trigger directly an remembrance of an event) the person might begin to search periods of his life when he used to interact more frequently with X, or the different scenarios in which they

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<sup>11</sup> Here it is important to note that the notion of knowledge is not used in the same sense in which contemporary epistemologists use it. It is often used as an interchangeable term to *information* or *belief*.

interacted in, until the search is able to retrieve a episode or is terminated without a sufficient memory response.

This search for memory retrieval occurs in what Conway calls “The Autobiographical Knowledge Base” (e.g., Conway, 1996, 2001; Conway; Rubin, 1993; Conway; Singer; Tagini, 2004). This is the structure that supports the encoding, storage, and retrieval of memories. This organizational structure was formally employed by Conway and Rubin in their article “The Structure of Autobiographical Memory” of 1993 and later used by Daniel Schacter in his book *Searching for Memory* of 1996, as well as in several of Conway’s subsequent articles (e.g., Conway, 1996, 2001; Conway; Pleydell-Pearce, 2000; Conway; Singer; Tagini, 2004). This structure, however, was already thematized in previous articles (Conway, 1987) and explored by other authors (Barsalou, 1988).

In this classification, autobiographical information is divided into three categories which are partonomically organized, *i.e.*, the more general category contains and grants access to the more specific ones. The three categories are lifetime periods, general events, and specific events (Conway; Rubin, 1993). First, we have the category of life periods, such as “when I lived in X”, or “when I was a child”. This is the level that contains the more general type of autobiographical knowledge, concerning years and decades of a subject’s past (Conway; Rubin, 1993, p. 104). As Conway *et al.* (2019) argue that although information about lifetime periods has marked beginnings and endings, they often overlap because lifetime periods contain a specific domain of knowledge. Frequently referring to goals, different lifetime periods can overlap because unrelated goals can be chronologically close (Conway; Justice; D’Argembeau, 2019, p. 46).

Second, we have general events, *i.e.*, events that concern days or months of one’s life (Conway; Rubin, 1993, p. 105). General events are the preferred level of processing of autobiographical memories because they optimize the amount of specific information that is available to the subject at the time of retrieval in relation to cognitive effort (Conway, 2001). General events usually refer to repeated or extended events, such as “going to the university”, or “my holiday in Buenos Aires”. General events are, therefore, plural in the type of information they may contain. A general event can have a sensory-perceptual nature, but its difference from episodic memories is that they are not specific to *singular* events. They may represent



events imagistically but do so in a more extended manner, meaning that they contain information on a plurality of events instead of a singular one (Barsalou, 1988).

And finally, we have the level of specific events, which are events that concern seconds, minutes, or hours of one's life. This level contains information about events that represent episodes of one's past (Conway, 2005; Conway; Rubin, 1993). They are represented in a sensory-perceptual manner, meaning that there is mental imagery in remembering a specific episode (Conway, 2001, 2005). Thus, it appears that the category of specific events or event-specific knowledge matches the understanding that Tulving had for "episodic memory". This category was not always linked to the concept of "episodic memory". However, in articles from the 2000s, Conway agreed that event-specific knowledge was equal to what we consider the information represented in episodic memory to be (Conway, 2001, 2005).

Thus, in sum, "autobiographical memory" could be defined in Conway's view, as a memory in which any type of self-referenced information is present in its content. Indeed, in the following excerpt, Conway criticizes Tulving's conception of "autobiographical memory" as a synonym for "episodic memory" and clarifies how the concept should be used:

Episodic memory and autobiographical memory might then [in 1972] be equivalent and, indeed, Tulving (1983) comments that he considered using the term "autobiographical" rather than "episodic" [...]. Tulving, however, would have been incorrect to use the term "autobiographical" memory to refer to records of spatiotemporal aspects of experience because autobiographical memories cut across the episodic-semantic distinction. (Conway, 1996, p. 166)

Conway's conception of "autobiographical memory" as "cutting across the episodic-semantic distinction" means that the concept of "autobiographical memory" does not fit in well with this distinction. That is because according to Conway, autobiographically relevant information comes in diverse types, both spatiotemporal and factual. In this way, Conway explicitly puts his thesis forward:

[...] autobiographical memories always contain both spatiotemporal knowledge and factual knowledge. The personal factual knowledge appears to contextualize the remembered event in terms of the rememberer's own personal history. Thus, one important characteristic of autobiographical memories is that they consist of multiple types

of knowledge and, consequently, cannot easily be compartmentalized into classes of memory that are defined by a single knowledge type. (Conway, 1996, p. 166-167)

Thus, we could conclude that Conway's view on the concept of "autobiographical memory" differs in relation to Tulving's mainly because the former considers "autobiographical memory" to be a concept that means a memory that always encompasses both spatiotemporal and factual knowledge, and the latter considers the concept to mean a memory which always encompasses solely spatiotemporal information. This is one difference that is more evident when comparing both views more closely. In what follows I will develop more on this difference as well as in other two tacit differences between Tulving's and Conway's views on "autobiographical memory", namely the phenomenological difference and difference in self-reference.

#### **4. LINGUISTIC DISAGREEMENTS ABOUT THE CONCEPT OF "AUTOBIOGRAPHICAL MEMORY"**

As we have seen from the textual evidence presented in section 4, it does seem that both Tulving and Conway use the term "autobiographical memory" differently. In this section, I will argue that there is a disagreement between the authors concerning the concept of "autobiographical memory". This disagreement is grounded on a conflict about the content of the concept of "autobiographical memory". Here I outline three major differences in content that ground the disagreement between the authors, namely differences in phenomenology, type of self-reference, and type of memory content.

##### **4.1 Difference in phenomenology**

Regarding phenomenology, we can note that Tulving's view of the meaning of an "autobiographical memory" introduced earlier takes it to be a term with the same meaning as that of "episodic memory" (Conway, 1996; Tulving, 1989). Also, as shown before, he clearly states that K.C. has autobiographical information about his life, but that we should not believe that he has autobiographical memory (Tul-

ving, 1989). I do not believe it is a conceptual error on Tulving's part to state that K.C. has autobiographical information about his life, but it seems clear that his use of "autobiographical memory" differs in important ways from the use employed by Conway. This is the case specially when the concept is used to represent memories that involve episodic elements, such as spatiotemporal information and subjective phenomenology (autonoesis). The tacit argument that can be interpreted given Tulving research intentions is that of saying that K.C. does not have autobiographical memories because he is incapable of subjectively experiencing time, or he is not able to be autonoetically aware.

Tulving's use of the term "autobiographical memory" considers that, as is the case of "episodic memory", autonoesis is a *necessary* and not only *contingent* component of autobiographical memory. Conway's view on phenomenology, however, considers that a subjective experience such as autonoesis would only arise in autobiographical memory when there is an interrelation between the information about the specific episode and its autobiographical context (lifetime periods and general events)<sup>12</sup>:

Indeed, it is only when EMs [episodic memories] become incorporated into an AM [autobiographical memories] during memory construction that the past is recollectively experienced and a specific memory formed. Autobiographical knowledge can, however, be accessed independently of EMs and when this occurs recollective experience is absent and, instead, access is accompanied by feelings of knowing. (Conway, 2001, p. 1382)

Here a *recollective experience* is understood as an experience of mental time travel<sup>13</sup>, which necessarily presupposes autonoesis (Tulving, 2002b). However, as can be seen from this passage, semantic autobiographical remembering is not taken to have such an experience. As we have previously seen, Conway considers that semantic autobiographical knowledge is only a portion of "autobiographical memory". Furthermore, he also agrees that episodic memories are necessarily ex-

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<sup>12</sup> Both Conway and Tulving seem to agree on the fact that autonoesis is necessary for episodic remembering. Conway, for instance, says that: "although it might be noted here that when an EM [episodic memory] or set of EMs are included as an active part of a constructed memory they always evoke recollective experience (the sense of the self in the past)." (Conway, 2005, p. 1337). Tulving, in the same way says that "It [autonoetic consciousness] is necessary for the remembering of personally experienced events" (Tulving, 1985, p. 3)

<sup>13</sup> "In Tulving's (1985, 2002) memorable phrase recollective experience is a type of mental time travel in which the past is experienced." (Conway, 2005, p. 614)

perienced recollectively. From this we can conclude that, in Conway's view, in some instances, recollective experience is needed for autobiographically remembering, whereas, in others, it is not, being therefore, contingent property. This is one important tacit difference that shows us that there is, in fact, a difference in content related to the concept of "autobiographical memory" that grounds the disagreement between the authors in what concerns the concept of "autobiographical memory".

#### 4.2 Difference in type of self-reference

Regarding the difference in self-reference, we can note a particular difference between the use of "autobiographical memory" between the authors. Whereas Tulving takes "autobiographical memory" to relate to an auto-noetic type of self-reference as is evident from his synonymous use of "autobiographical memory" with "episodic memory", Conway understands the term as encompassing every type of information that is self-referent, be it auto-noetically or noetically so.

To make this difference clear, let us take the semantic-episodic distinction as an example. To remember semantically, one does not necessarily need to represent self-referencing content. As the contents of semantic memory are often defined as the "symbolic representable knowledge that organisms possess about the world" (Tulving, 1985, p. 2), one can remember that "Germany is a part of Europe", for instance, without making any reference to oneself. In episodic remembering, in contrast, remembering is self-referent regarding its phenomenology (Andonovski, 2023; Metcalfe; Son, 2012; Perrin, 2016; Tulving, 1985). When one mentally travels back in time, there appears to be a necessary implicit identification with the self that remembers with the self which is remembered, meaning that they are felt as being the same (Perrin, 2016). This is immediately evident when we remember an episode from our past and *feel* it something that we already experienced before. This implicit identification means that when one engages in an act of episodic remembering it is evident from the get-go that this represented experience is about one's past personal experiences.

However, in "autobiographical memory", the opinions differ. As stated before, for Tulving, it appears that self-reference in autobiographical memory, as is the

case for episodic memory, is necessarily related to an auto-noetic or implicit type of self-reference. For Conway, however, although self-reference is a necessity for autobiographical memory, it may occur differently from what occurs in episodic memory. Given that the concept of “autobiographical memory” is wider in scope than that of “episodic memory”, *i.e.*, it involves different types of content, self-reference does not come in only one type. (Conway; Rubin, 1993).

For Conway, to remember autobiographically one can both engage in reminiscing about factual (or propositional) information about oneself (as K.C. does, for instance) and also remember auto-noetically a specific episode from his past. To clarify this point, let us call the former semantic autobiographical memory and the latter episodic autobiographical memory<sup>14</sup>. Conway’s model proposes that autobiographical memory encompasses both semantic and episodic autobiographical memories. In episodic autobiographical memory, both Conway and Tulving agree that this is a type of remembering that is necessarily accompanied by an experience of reliving the episode, or what Tulving calls auto-noesis (Conway, 2005). Regarding the type of self-reference that would mean that episodic autobiographical memories would necessarily involve an auto-noetic or implicit self-reference. However, semantic autobiographical memories are not accompanied by such phenomenological experience and are accompanied by feelings of knowing (*i.e.*, a sense that the represented proposition was previously learned by the subject), as is to be expected by representations of propositional content.

But unlike mere semantic memories, which may not reference a self at all, semantic autobiographical memories involve (by definition) a type of self-reference that is, however, not auto-noetic. The type of self-reference in semantic autobiographical memories can only be a noetic or explicit one. To say that self-reference is explicit means that the self is referenced explicitly in the propositional content of semantic autobiographical memories (In propositions that occurs by employing the self-referencing personal pronouns “I” or “me”, for instance). However, as the term “autobiographical memory” encompasses both episodic and semantic autobiographical memories, this would mean that for Conway autobiographical memory does not necessarily involve (although it might typically involve) an implicit type of self-reference, but also an explicit type of self-reference.

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<sup>14</sup> This terminology is also used in the literature (see, for instance, Markowitsch; Staniloiu, 2014).

Thus, although we could clearly distinguish autobiographical memory from semantic memory by acknowledging the self-referent information present in the propositional content of the former, in Conway's framework the same is not true regarding its distinction to episodic memory. Following Conway's view on the deep relation between autobiographical memory and the self (Conway, 1996), we could argue that when one remembers autobiographically there is some type of reference to the self either in the content or in the experience of remembering. Therefore, for Conway, the type of self-reference in autobiographical memory can be either implicit or auto-noetic or explicit and merely noetic. I believe that this is partly stated by Conway when he relates the representation of autobiographical knowledge and "feelings of knowing" (Conway, 2001, p. 1382).

Therefore, concerning the type of self-reference in each type of mental state, we can see that Tulving and Conway differ in what types of mental states fall under the scope of the concept of "autobiographical memory". As expected from Tulving's view of the equalization of both concepts, an "autobiographical memory" would be related to auto-noetically self-referent mnemonic mental experiences. For Conway, however, "autobiographical memory" encompasses mnemonic mental experiences that can be both auto-noetically self-referent as well as noetically self-referent, that is, the self-reference may be present both in the auto-noetic mode of experience as well as in the propositionally expressed content of autobiographical knowledge.

#### 4.3 Difference in the type of content

Regarding the difference in content, Conway's conception of "autobiographical memory" shows us that this term can be considered as an intermediary between those of "semantic memory" and "episodic memory". This is because an autobiographical memory can be propositional in nature, like semantic memory is, as well as having a personal dimension, like an episodic memory.

Also, Conway's classification of what figures as an "autobiography memory" seems to be greatly related to content, and more specifically to self-referent content, given that autobiographical memories are necessarily correlated to the autobiographical knowledge base (Conway, 2001, p. 1375)<sup>15</sup>. That is, "autobiographical

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<sup>15</sup> I thank the anonymous reviewer two for pointing that out.



memory” categorizes mnemonic mental representations that are in some way self-related (Conway, 1996, p. 167). He proposes that it is not problematic to refer to “autobiographical memory” as memories that differ sharply regarding their type of autobiographical information. Thus, as we have seen, Conway’s conception of “autobiographical memory” could apply to memories of specific events, a memory of general events, or even a memory of periods of life (Conway, 2001). Its content would encompass both spatiotemporal information as well as propositional information (Conway, 1996, p. 167). This is an essential ambiguity of the concept, and it may well be useful for the empirical purposes for which it was created.

Conway’s research, as shown by his Self-Memory System, for instance, focuses on how memory is related to the completion of goals. In this way, the cues that one person is given can generate a retrieval of a specific episode to satisfy the given goal at hand (Conway, 2005; Conway; Pleydell-Pearce, 2000). Conway’s view depends on the idea that a cue can activate certain pieces of knowledge within the person’s autobiographical knowledge base (Conway; Pleydell-Pearce, 2000). Additionally, that activation spreads until one specific episode can be retrieved. This may happen cyclically, with iterative attempts to retrieve a specific episode, or in a direct way with an episode being retrieved immediately after the presentation of the cue (Conway, 2005, p. 616-618).

Tulving, on the other hand, focuses on delineating differences between two memory systems, that is, proposing differing characteristics for the semantic-episodic distinction (Tulving, 1972, 1985, 2002a; Tulving; Markowitsch, 1998). In this way, the term “autobiographical memory” appears relatively little in Tulving’s works, and when it does it is majorly seen as synonymous with the concept of “episodic memory” following the views of, for instance, Schachtel (1947). Therefore, it is understandable that, because his research purposes did not necessitate a central role for “autobiographical memory”, the concept figured with a less complex conception of the different types of content that it could encompass. That is, conceiving “autobiographical memory” as the type of memory majorly responsible for the representation of spatiotemporal information was not problem to the completion of his research goals.

Therefore, here I aimed to argue that Tulving’s conception of “autobiographical memory” has deep differences in relation to Conway’s conception of “autobi-

ographical memory”. In sum, by investigating the clinical case of patient K.C., Tulving focuses on distinguishing the memories that are accompanied by a specific type of phenomenology, what he calls *autonoesis*, from those that are merely represented as factual knowledge. Thus, the term “autobiographical memory” is used as an interchangeable term for “episodic memory”. Conway, on the other hand, aimed to explain how one goes from receiving a cue to the remembrance of past events. In his view, propositional autobiographical knowledge is important because it contextualizes and provides access to specific information that satisfies the goal of remembering that is set by the memory cue. In this way, “autobiographical memory” is seen as a term that encompasses both propositional knowledge and specific spatiotemporal information.

Furthermore, my main objective in this section was to show that knowing the differences in the conceptions of “autobiographical memory” is essential for avoiding conceptual mistakes. These differences can be considered as grounded in different research agendas, with Conway, on the one hand, distinguishing different types of knowledge that are self-related, and Tulving on the other distinguishing the differences between the capacity for retrieving knowledge and for retrieving experiences of events, or what is called the semantic-episodic distinction.

## CONCLUDING REMARKS

In this work, I aimed to undertake a conceptual engineering task. More specifically, I aimed to put forward a task of conceptual analysis or conceptual genealogy of the concept of “autobiographical memory”. My main goal was to clarify, basing myself on the empirical literature available, what is an “autobiographical memory” according to its different uses. My diagnosis reveals that the term “autobiographical memory” is used in different ways throughout the literature and that these different uses can be interpreted as a disagreement regarding the concept of “autobiographical memory”.

Following the definition of disagreement by Plunkett and Sundell (2013), which states that disagreements originate in the incompatibility of the content of the concept by the interlocutors, I have outlined three differences in the conception of “autobiographical memory by Tulving and Conway. First, they differ in the ro-

le of subjective experience in the definition of “autobiographical memory”, with Tulving defining it as necessary and Conway defining it as contingent. Second, they differ in the way self-reference is presented in “autobiographical memory”, with Tulving requiring self-reference in the subjective experience of the mental state, and Conway enabling both self-reference in subjective experience and self-reference embedded in autobiographical factual knowledge. Lastly, they differ in that Tulving conceives “autobiographical memory” as encompassing solely spatiotemporal information, and Conway allows also for the addition of factual knowledge. Thus, with the attempt of conceptual clarification undertaken here, I believe the reader will be more prepared to deal with the term “autobiographical memory” and be aware of its boundaries in relation to other key terms within the philosophy and psychology of memory.

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