METAPHOR OF THE DATABASE: A TASTE CONSTRUCTION[1]

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Abstract

At the present time, we are metaphorizing in the sense of Lakoff (1998) regarding the creation of a *database* which can generate new tastes using artificial intelligence. On the one hand, there is a discussion about whether artificial intelligence is capable of creating new tastes, while on the other hand, there is a metaphorization based on the translation of our experiences and sensory perception. These elements are central when analyzing the metaphorization of the *database* for the construction of new tastes. The discussion is characterized by the problematic translation of perception between humans and its transfer to the machine. In order to analyze this phenomenon, I shall rely on Lotman's (1999) notion of translation, as well as

[1] The issues addressed in this article are currently being investigated as part of my doctoral thesis at the University of Turin and the University of Lille.

Digital Age in Semiotics & Communication, Vol. VII, 2024, 91–107
https://doi.org/10.33919/dasc.24.7.6

the notion of Hartley, Ibrus, and Ojamaa (2021) of how the translation from sensory perception to digitization occurs. It is important to note that, according to Hartley, Ibrus, and Ojamaa (2021), this translation to the digital sphere is primarily carried out through linguistic means. It is this element which allows me to connect it to Lakoff's (1998) notion of metaphor. The methodology developed in this article is based on the semiotics of Charles Sanders Peirce (1839–1914), since it enables me to comprehend the notion of experience. Additionally, I shall draw on concepts developed by Biggio (2020) as he focuses on the computational phenomenon, combining a linguistic and social perspective. In order to understand these phenomena, I shall present some case studies related to taste and artificial intelligence. In summary, this study aims to shed light on the metaphorical connections between artificial intelligence and the construction of new tastes.

Keywords: taste experience, metaphor, database, artificial intelligence, translation

Introduction

For a number of years, contemporary society has been undergoing a process of information digitization, which subsequently has evolved into the nucleus for creating an extensive *database*. Various instances exist where artificial intelligence is applied across diverse dynamics, influencing daily life. In the case studies central to this article, the focus is on establishing a *database* with the objective of formulating novel gastronomic tastes.

In order to conduct this analysis, I have employed a qualitative methodology, examining various applications and functions such as *Sous Chef* by *ChatGPT*, *Bing*, and *Flavor Graph*. These serve as direct examples of the use of artificial intelligence in influencing the realm of gastronomy.

Within this analysis, I draw upon Charles Sanders Peirce's (1839-1914) semiotic theory as a foundation, since it allows me to comprehend the experience and *habitus* created within the development and acceptance of new gastronomic tastes. Additionally, referencing digital case studies, I find it relevant to consider Biggio's (2020) study which establishes the interactive relationships between humans and machines. As Biggio (2020) asserts, "we will not be concerned with computer-mediated social interactions, but rather with solipsistic experiences of the user facing the computer, in which it seems permissible to trace forms of computational enunciation occurring between an artificial instance and an empirical human subject" (Biggio 2020: 384).

Hence, we recognized that in the case studies showcased herein, the significance of comprehending these aspects within the framework of the notion of experience, particularly in light of the concept of taste, is paramount. In this analytical context, it is essential to transition from the definition of taste – a dimension we subsequently explored – as a sensory perception to an understanding of what constitutes a taste experience. This transition is crucial for capturing its semiotic meaning and significance.

If we commence with the premise that each piece of information in the *database*, involving recipes and chemical compositions of different ingredients in these instances, is designed in such a way that artificial intelligence can generate possible new taste combinations, they inherently involve the element of an experience translated into the digital sphere. Using this focal point, along with Lakoff's (1998) concept of metaphor, we can comprehend that the *database* implies a metaphor. "But metaphor is not merely a linguistic matter; it is a matter of conceptual structure. And conceptual structure is not purely an intellectual issue; it encompasses all the natural dimensions of our experience, including aspects of our sensory experience: color, shape, texture, sound, etc." (Lakoff 1998: 288).

In this conceptual framework, we understand that the construction of the *database* involves a metaphorization of the same. However, there are different levels of translation in the sense of Lotman (1999). At a primary level, we encounter the experience of human perception concerning the taste experience. On the other hand, a translation is conducted to digitize these mechanisms, thereby forming the *database* that will be utilized for the creation of new taste combinations.

In Lakoff's terms (1998), metaphors facilitate the comprehension of experience, and new metaphors have the ability to generate novel understandings and realities (1998: 288). Consequently, we understood that we are currently witnessing a new reality and, therefore, a new metaphor entailing the creation of this *database*.

In order to gain a deeper understanding of the aforementioned phenomena, we consider it relevant to delineate certain definitions of taste to navigate the transition from taste as a sensory perception to the realm of taste experience. This involves comprehending sensory encounters through Merleau-Ponty's theory of perception (2014) and enriching this perspective with Peirce's notion of experience (CP 1.335)[2].

[2] The citations to the work of C. S. Peirce are made in the usual manner: CP [x.xxx] refers to the volume and paragraph in *The Collected Papers of Charles S. Peirce* edition.

Taste & Experience

Over the years, a multitude of scholars from diverse perspectives in the field of human sciences have been engaged in ongoing research on the phenomenon of taste. Noteworthy researchers in this area include Appadurai (1988), Appiano (2012), Barthes (1986), Bianciardi (2011), Bourdieu (1979, 2010), Boutaud (2011, 2019), Fischler (2001), Mangiapane (2021), Marrone (2013, 2014, 2015, 2016, 2022), Mazzocut-Mis (2015), Perullo (2011, 2016), Pfirsch (1997), Stano (2005, 2012, 2015, 2017, 2018, 2019, 2020, 2021), and Volli (2015), among others.

A central element emerges from all these research efforts: in order to analyze the taste experience and flavor, it is essential, on the one hand, to define taste as an element that combines both its individual and social aspects, while on the other hand, to understand its synesthetic characteristics. Every time we engage in a tasting process, a dynamic unfolds where the meaning of this act involves not only the sense of taste, but also entails a combination of elements that go beyond taste and appeal to all human senses – touch, sight, hearing, and smell. Henceforth, my focus lies on examining taste as a sensory perception and the intricate process of interpreting the meaning and signification it entails. In the concrete act of tasting, a set of sensations occurs simultaneously which allow for and constitute a taste experience. For this reason, I shall focus on the idea that all the senses come into consideration. Aat the same time, in order to create the *database*, that metaphorical sensory translation needs to be done before creating a new taste. It is worth noting that the distinction of the importance of all senses is purely theoretical-methodological, since everything occurs simultaneously in the process.

First of all, it is relevant to focus on the concept of taste which finds a correspondence in the studies cited earlier. Within the definitions of this concept, I will focus on Lorenzo Bianciardi's (2011) explanation, since it allows for the development of the dynamic relationship between the individual and the social. The author begins by defining taste as an element which emerges after each tasting and involves the ability to recognize the specific flavors of each food. This mechanism includes the voluntary selection of certain flavors over others (Bianciardi 2011: 31). According to Bianciardi (2011), in the case of taste, we are always confronted with a differentiation of the value of each tasted ingredient. This understanding is associated with subjective personal matters, as well as with the context where the subject is located. This can affect the type of taste derived from ingredients that are accepted as edible in a given culture.

Within this dynamic, Bianciardi (2011) argues for the importance of viewing taste as a matter of primary concern to the individual and their relationship with the object, which in this case is the dish to be tasted. Simultaneously, there is a need to reflect on and emphasize the different aspects which need to be considered when analyzing taste. According to Bianciardi (2011: 29–75), one of the central problems of taste is to define its duration. This takes into consideration both the physical-biological aspect (tongue, palate, nose) and its cultural aspect.

Revisiting the concept of taste as a biologically-rooted phenomenon impacted by cultural factors, we are confronted with a dual form of discrimination. One aspect pertains to the individual, while the other is intrinsically linked to the societal norms within which the individual is situated. Within this framework, it can be traced a cultural semiotic structure, inspired by Lotman's (1979) portrayal of culture. He portrays culture as a universally organized system which must juxtapose itself with non-culture in order to establish its identity. This is essential to consider when contemplating the creation of the *database* in such a way that artificial intelligence can subsequently provide new ingredient combinations leading to a novel taste experience.

Another fundamental aspect to consider in the creation of the *database* is the existence of a social classification of the value of taste linked to a taste memory, as pointed out by Jean-Jacques Boutaud (2011: 7). Boutaud contends that individuals retain memories associated with their dining rituals and the context in which a dish is savored. According to Boutaud, during communal eating rituals, individuals engage in a personal "bricolage" between their subjective memories and the actual experience of consuming food (ibid.: 30). "Each food, like each dish, has a story: its own story, found in the collective imagination; but it also has a personal story, found in us, in our memory. Therefore, in the experience of food, the food always remains something to discover and taste again" (Boutaud 2011: 39).

Boutaud (ibid.) posits that a cognitive process linked to taste intricately blends sensations, flavors, and memory. Thus, memory plays a crucial role in shaping the sensory perception which fundamentally evolves into a taste encounter. However, to grasp this evolution of memory, one must transcend the concept of taste as a mere sensory function and explore the necessity of transitioning to a taste experience in order to analyze it fully, thereby unraveling its sense and meaning.

Therefore, one of the main problems we encounter involving taste is the sensory complexity. Hence, an analytical classification needs to be established which takes into account all the senses.

Taking up Boutaud's (2011) terms and focusing on the visual aspect of taste allows to recognize a problem of the image and taste also emphasized by Stano (2017: 421). Stano reflects on the concept of the "taste image" created by Boutaud (2011) which arises from the interrelation between different levels presented in the image of a dish to be tasted. Initially, there are the sensations generated by that taste image. In other words, this is an aspect which initially relates to the subjective inner sensations evoked by the image of each food. On the other hand, there is a discursive dimension. This is a process through which one moves from sensations to words: the description of the dish to be tasted, which implies a translation between the sensory dimension and language. In accordance with the aforementioned source, there is a transition from what would involve a "sensory image" to what would be the "taste image". According to the same source:

> The term "sensory image" is used in the physiology of perception but corresponds to operations of qualitative and quantitative coding; a third component is added to them, the hedonic component. The first two components, which play a role in taste discrimination, depend solely on the physico-chemical properties of what is ingested. Qualitative coding allows for identifying the nature of the stimulus, for example, sweet or salty, based on previous experiences (ibid.: 64).

The concept developed by Boutaud (2011) regarding the levels of the "taste image" in this article is closely related to Peirce's semiotics. The three levels outlined earlier can be aligned with the levels proposed by Peirce who analyzes reality and experience. Peirce employs the semiotic *Phaneron* to elucidate the experience of individuals, consisting of three fundamental elements: the universe of sensations (*Firstness*), corresponding to Stano's (2017) and Boutaud's (2011) first level; the discursive dimension (*Secondness*), which encompasses the transition between sensations and the tangible object to be tasted; and lastly, the scenic level (*Thirdness*), which pertains to the symbolic and implies the symbolic character of *Thirdness* as defined by Peirce.

In this paper, I specifically focus on Peirce's framework to explicate the taste experience, while drawing on the concepts of "taste image" and "taste memory" developed by Boutaud (2011). In order to illustrate the taste process, I provide an example of a tasting experience using the terms previously mentioned. Peirce's perspective on experience (CP 1.335) proves valuable in understanding the unfolding of a taste experience. By employing this theory, I shall analyze how the process of tasting unfolds. The individual progresses from *Firstness* (CP 1.302), which, as previously described, em-

phasizes the sensations produced by taste prior to the actual act of tasting. The concrete sensations manifest distinctly during the moment of tasting. This indicates a multitude of possibilities before the specific moment of consumption, when the subject cannot yet actualize these sensations.

According to Peirce, *Firstness* implies that "freedom can only manifest itself in unlimited and uncontrolled variety and multiplicity. Thus, the first becomes predominant in the ideas of unlimited and varied senses. It is the guiding idea of the "variety of senses" (CP 1.302). It is worth noting that the amount of possibilities established by *Firstness* depends on the society to which the subject belongs, since the possibilities of certain ingredients to be tasted or not depend on the culture in which subjects find themselves. This concept echoes Lotman's notion of culture (1979), who claims that each culture, to define itself, needs a non-culture. In this particular case, this notion involves the definition of which elements are considered edible and which are not, in order to create a distinctive culinary identity. This is central when having the information to create the *database*.

Given this framework, in order to discuss the next step of the taste experience, this article will explore what Peirce refers to as *Secondness* (CP 1.325) which is strongly linked to the inherent characteristics of the object to be tasted. An example of this concept could be given by defining the temperature and texture of the element being tasted. According to Peirce, in Secondness, "secondness is predominant; for the real is that which insists upon forcing its way to recognition as something dyad consists of two subjects brought into oneness. These subjects other than the mind's creation" (CP 1.325).

Finally, I shall highlight the concept of the semiotic *Thirdness* (CP 1.26), in the sense that if the individual belongs to the culture from which the tasted comes from, they will be able to define, categorize and classify tastes and flavors. Following this process, it is possible to describe a taste experience when the individual manages to recognize the tasted elements. Notably, at this point in the process, we engage with *Thirdness* (CP 1.26), namely, the *Interpretant*, which enables a *semiosis* of taste recognition and of taste experience. It is essential to clarify that this tasting process occurs instantaneously and concurrently. This is crucial to understand the translation of this process so that artificial intelligence can generate new tastes and, at the same time, provoke a new type of taste experience.

At the same time, one of the elements to take into consideration is precisely the visual sense. This is one of the senses which most impacts the taste experience and is closely linked to the creation of images of new and traditional recipes produced by artificial intelligence. We will examine

these cases in the case study section of this article, where the translation of the visual sense created by artificial intelligence can be observed. In this case, I will focus on traditional dishes and how artificial intelligence represents them.

Body Perception & Translation

Another crucial element which warrants attention concerning the body and the perception of taste experiences stems from Stano's (2019: 149) perspective. This allows for a connection to be made with Peirce's (1839–1914) semiotic model of experience, reportedly discussed throughout this article. Stano (2019) argues that "the body is not only a signifier but actively participates in processes of signification (of the world in which it finds itself, of other bodies, and of itself). This opens up a wide range of issues of strong interest and semiotic relevance, from the problem of the connection between sensoriality and cognition to various practices of body writing" (Stano 2019: 149).

This element emphasized by Stano (2019) is crucial since it highlights the differences with the research conducted by Merleau-Ponty (2014) on the body and perception. In Merleau-Ponty's research on the phenomenology of perception, a characteristic Cartesian dichotomy arises between the body and the external world. From this perspective, the focus is on elements pertinent to the discussion of taste experiences and their relationship with the body and perception. As such, I incorporate Stano's (2019) emphasis on the necessity of studying the body:

> Not as a simple place but as the very instance of translation between these regimes – an instance that, precisely due to the translational work it carries out, emerges as the threshold par excellence of semiosis, as it is capable of generating, interpreting, and simultaneously circulating meaning. It is to this necessity that, in recent years, I have tried to respond in the first person, particularly by reflecting on the functioning of taste and the transition of food from the senses to meaning (Stano 2019: 158).

In order to advance this concept further, it is crucial to establish connections and enhance Merleau-Ponty's (2014) viewpoint on perception by expanding on Peirce's framework, as discussed throughout this dissertation. When elucidating Merleau-Ponty's (2014) phenomenology of perception, it is important to explore the notion of sensation, a cornerstone for grasping perception.

Merleau-Ponty (2014) posits that sensation forms an all-encompassing experiential realm, yet individuals tend to give precedence to particular

sensations which converge within specific domains. Moreover, he argues that perception itself carries an inherent significance, aligning with the challenging aspect highlighted by Stano (2019) in asserting that experiences surpass mere observed perception. Drawing from Peirce's semiotics, it can be asserted that experience is not merely an isolated event, but that rather, through experience, we develop *habitus* and gain deeper insights into our reality. Merleau-Ponty's perspective (2014) underscores that experience encapsulates a phenomenon interwoven with concrete elements, while Peirce's semiotics suggests that each experience is inevitably linked to a specific tangible object. Thus, a common thread emerges between the two theories. However, within Merleau-Ponty's theory of perception (2014), the primary challenge lies in the dichotomy between the body and the mind, rekindling a dualism which hampers the exploration of the connection between perceived objects and human beings.

One of the fundamental aspects in Merleau-Ponty's (2014) work, which also aligns with the construction of a taste experience, is the notion of the ensemble of sensations in the world that exist external to human bodies. According to the author, individuals attribute meaning to sensations because they are already immanent to the factual elements. However, adopting Peirce's theory of experience, I contend that the sense-making relationship between what is encountered in the realm of sensations and the objects eliciting those sensations is fundamentally established through *semiosis*, primarily facilitated by humans. It is here that the sense of experience, always linked to a specific object, can be found.

From this perspective, it is crucial to comprehend the taste experience through the relationship with the objects we taste and the sensations they elicit in our bodies that a specific experience is engendered. This recognition of the existence of these elements is essential for our understanding. It is in this context that the connection between the field of sensations and the objects that produce them is established primarily through *semiosis*, as facilitated by humans. The recognition of these elements allows for the acknowledgment of their existence, specifically in relation to a particular dish or ingredient. The absence of ingredient classification or specific dishes renders the determination of taste *semiosis* impossible. Moreover, the functionality of artificial intelligence heavily relies on the development of *databases*. These necessitate a classification system for the recognition of specific ingredient combinations, thereby enabling the creation of new tastes.

Regarding the issues of memory, as I have mentioned as an important element within what implies a taste experience, Merleau-Ponty (2014) asserts that:

> The fact is that, to come to completion in perception, memories must be made possible by the physiognomy of the data. Before any contribution of memory, what is seen must presently organize itself in a way that offers me a framework in which I can recognize my previous experiences. Thus, the appeal to memories presupposes what it is thought to explain: the structuring of data, the imposition of meaning on sensory chaos (Merleau-Ponty 2014: 30).

Therefore, it is evident from this assertion that memory, also referred to as recollection by the author, unequivocally exerts an influence on both our physical state and the perception of every sensation. In the realm of taste encounters, as well as all other types of similar experiences, memories play a role in shaping the significance and interpretation we assign to each sensory *input*. Nevertheless, Merleau-Ponty (2014) introduces the idea that meaning is inherent in perception and somewhat autonomous from actual lived experience, "if, finally, it is admitted that memories do not project spontaneously onto sensations and that consciousness compares them with present data, retaining only those that accord with it, then an original text is recognized that carries its meaning within itself and opposes it to that of memories: this text is perception itself" (Merleau-Ponty 2014: 31).

Consequently, it can be discerned from this statement that memory (or recollections), does not automatically superimpose sensations. Rather, consciousness juxtaposes them with present data and selectively retains only those that correspond with its current state. This dynamic gives rise to an original text which inherently embodies its meaning while contrasting with memories, and this text is none other than perception itself. The challenge of creating a taste experience presents a direct issue. Through the lens of semiotics, it becomes apparent that the meaning of an object is not predetermined by the object itself. The object, in its essence, only triggers sensory sensations such as cold, heat, texture, sound, color, and so on. However, the meaning of the object arises within the framework of taste *semiosis*, taking into account the individual's context and taste memory.

Peirce understands *semiosis* as:

> Yet this does not quite tell us just what the nature is of the essential effect upon the interpreter, brought about by the semiosis of the sign, which constitutes the logical interpretant. (I important to understand what I mean by ***semiosis.*** All dynamical action, or action of brute force, physical or psychical, either takes place between two subjects [whether they react equally

> upon each other, or one is agent and the other patient, entirely or partially] or at any rate is a resultant of such actions between pairs. But by "semiosis" I mean, on the contrary, an action, or influence, which is, or involves, a cooperation of ***three*** subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any way resolvable into actions between pairs. {Sémeiösis} in Greek of the Roman period, as early as Cicero's time, if I remember rightly, meant the action of almost any kind of sign; and my definition confers on anything that so acts the title of a "sign".) (CP 5.484, emphasis in the original).

Therefore, it is through this relationship that we can comprehend the meaning and significance of the taste experience, albeit partially contradicting Merleau-Ponty's explanation. It is necessary to incorporate aspects of both theories within the experience to achieve a comprehensive understanding of the phenomenon's complexity, particularly by integrating Peirce's semiotic theory.

Therefore, the transition and translation of all these elements needs to be done which would imply their digitization to create the *database*. This would explain the cases of the electronic nose (Alphus 2009) and electronic tongue (Urueña 2004). I maintain that these elements can be seen as a metaphorization of human perception transitioning to digitization. I support this assertion based on how Lakoff (1998) defines metaphor. According to the author, "the metaphors that structure our perception, our thinking, and our actions. To give an idea of what it means to say that a concept is metaphorical and that it structures our daily activity" (ibid.: 22). In summary, understanding that to analyze taste, perception needs to be considered, and a new taste created mediated by artificial intelligence, a digital translation of information is required.

As Hartley, Ibrus, and Ojamma (2021) argue, "the fundamental process underlying digitization is translation from continuous (analogue) codifying systems to a discrete (digital) system, which is in principle similar to translating a visual text into a text in verbal language" (Hartley, Ibrus, and Ojamaa 2021: 87). Additionally, the authors maintain that there is a process of translation within the language used to create the *database*. They state that the "database is not only a signpost pointing towards the text or a simple means via which we automatically get to the text but also a model of the text itself, the extra-textual reality that the text mediates, as well as the text's potential and real uses and positions in dynamically changing contemporary cultural networks" (Hartley, Ibrus, and Ojamma 2021: 135). Within the conceptual framework of metaphor as employed by Lakoff (1998), we understand that there is a metaphorization which allows us to comprehend our perception, transitioning to the creation of the *database*. It is for this

reason that there is a metaphorization of the database to create a new taste with artificial intelligence.

Cases of Study

I shall present specific cases regarding the utilization of artificial intelligence to generate new tastes. In collaboration with Sony, Korea University developed an application named *Flavor Graph*. This application, leveraging a comprehensive *database*, adeptly combines ingredients which have not been utilized previously. The functionality of the application relies on a detector for the chemical components of each ingredient, recognized through *machine learning*. Consequently, it produces a guide outlining the ingredients that have been previously combined and suggests potential combinations not previously explored by humans, as illustrated in Figure 1.

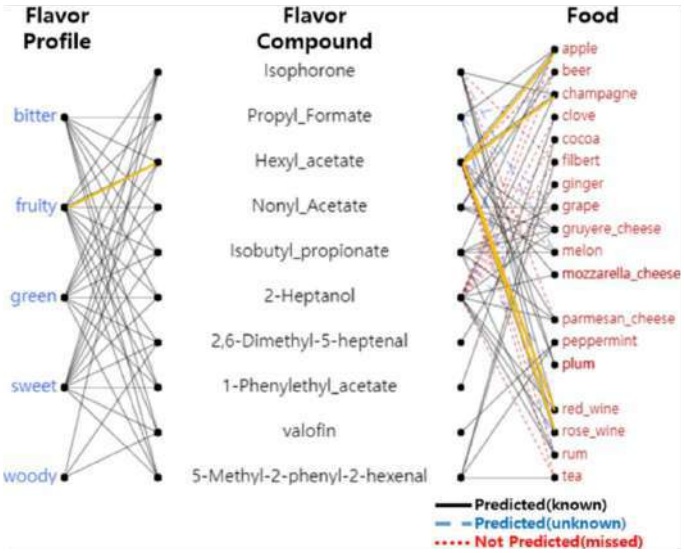

Fig. 1: *Flavor graph*

This case is an exemplar which underscores the significance of metaphorizing the *database*, given that the entire outcome depends exclusively on information from translated sensory perception to generate the algorithm's response.

Another case I present involves the aforementioned scenario where information is solicited from artificial intelligence systems such as *Bing* and the *Sous Chef* function of *Chat GPT* to generate images of typical dishes from locations considered significant in European gastronomy, such as Italy, France, and Spain. It is important to note that the outcomes of these images depend on the user's geographical location, the inputted words,

and, importantly, the metaphorization of the *database* embedded in these applications. It is crucial to consider that, as mentioned earlier, images play a significant role when contemplating a taste experience, since they directly impact the visual sense as implicated in each taste experience. Subsequently, I present images generated with the *input*: typical Italian, French, and Spanish food.

Fig. 2: *Sous Chef* Italy

Fig. 3: *Bing* Italy

Fig. 4: *Sous Chef* France

Fig. 5: *Bing* France

Fig. 6: *Sous Chef,* Spain

Fig. 7: *Bing*, Spain

From the perspective of visual semiotic analysis, we can assert that these images, considering Greimas and Courtés's (1986) semiotics with their definition of *débrayage*, become central concepts in understanding the sense and meaning of these images. The creation of these images depends on the external framework of what is in the image. They rely on the metaphorical construction of the *database*, the geographical location where the user performed the search, and the words used as *input* to generate such images. Additionally, using Peirce's semiotics, we can comprehend the importance of the context in which the images are produced, deriving the sense from that context. I argue that there is a new form of *foodporn* (Allard & David 2022), since these images have an artificial aspect which does not evoke the viewer's desire to eat the dish. Instead, they are more descriptive images because, once again, the functioning of artificial intelligence is based on the information in the *database*. All the recipes we find begin with the description of each ingredient composing the dish. Therefore, we can observe these images which highlight each ingredient individually rather than the dish as a whole.

Conclusion

In conclusion, we are currently witnessing a new paradigm in the creation of taste experiences facilitated by artificial intelligence. Given all the characteristics of taste mentioned in this article, it is paramount to consider the method by which information is translated into the digital sphere to construct the *database*. This becomes the focal point, enabling artificial intelligence to discern novel taste experiences.

The concept of metaphor proves instrumental in understanding the importance attached to the perception of sensations, as well as the translation involved in creating new tastes through these mechanisms. Lakoff (1998) contends that metaphors play a crucial role in comprehending our perception and every experience. Both these elements are pivotal when contemplating the development of new tastes mediated by artificial intelligence.

Therefore, the way in which we structure our thinking, perception, and experience is impacted and translated into the digital realm, subsequently enabling the creation of new tastes. However, it is important to reflect on the ethical implications concerning the authenticity of such gastronomic elements. Attributing the creation of a taste to artificial intelligence may simply be due to a lack of information. In other words, a deficiency in metaphorical translation within the *database*. In conclusion, I contend that semiotics can assist in elucidating these issues and prompt a reexamination

of the current production paradigm surrounding the creation and construction of a novel taste experience.

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