Right for the wrong reason; wrong for the right reason: Gibson and Arnheim on picture perception

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Although J J Gibson's theory of picture perception was often crude and biased toward naturalism, its fundamental division between the visual world and the visual field made it a semiotic theory. Contrariwise, although Arnheim wrote sensitively on pictures, he never seemed to admit that they were signs. This paper reviews both Gibson's and Arnheim's theories of picture perception, and explains where Arnheim's biases caused him to lose the possibility of framing his approach in the most basic semiotic terms. Nevertheless, using the phenomenological semiotics of Sonesson and his theory of the Lifeworld Hierarchy, I demonstrate latent semiotic elements in Arnheim's theory, due perhaps to Alfred Schutz's influence. Hoping to argue against the brute theory of denotation, Arnheim instead sought to delay invocation of (conventional) signs as long as possible, and his idea of iconic pictorialization assumes but does not name signification. Nevertheless, I propose that Arnheim has a kind of theory of the Lifeworld Hierarchy inside the picture. Thus, he (wrongly) does not see the picture as overtly signifying but interestingly gives hints about how to treat the objects of the virtual world of the picture based on their relationship to the overall style of the work.

Keywords: phenomenological semiotics, Arnheim, Gibson, Gestalt theory, ecological psychology

For Göran Sonesson on his 70th birthday

"But what is a symbol as seen by Gestalt psychology?" David Katz, *Gestalt Psychology: Its Nature and Significance*

1. Introduction

Many years ago I was shocked to discover that J. J. Gibson – and not Rudolf Arnheim – was extensively cited in the semiotic literature on pictorial meaning (e.g., Sonesson, 1993). When discussing picture perception, theorists always distinguished "realists" like Gibson from "constructivists" like Panofsky (1991). How is it that Gibson, who did not focus on how pictures are fundamentally different from reality, was embraced by semiotic theory? And how is it that Arnheim, who loved experimental and *avant garde* art and radically announced its difference from reality, was apparently neglected in semiotics? This is the question that faced me over the years as I tried to understand both the neglect of Arnheim's work for picture perception and the surprising for me prominence given to Gibson. As my title suggests, the answer that I propose is complicated. I will suggest that Gibson was liked by semioticians almost on a technicality that caused him to produce a largely unproductive theory of picture perception, while Arnheim refused to articulate a basic element of his excellent theory that led to its observations not being taken to heart. That is, Gibson never followed the consequences of this view while Arnheim assumed it.

Gibson and Arnheim were the same age, both born in 1904. When Arnheim arrived in the United States in 1940, Gibson had become very knowledgeable of Gestalt psychology at Smith College, where Kurt Koffka taught. Gibson's stimulus-gradient theory of perception was developed from Gestalt psychology, but interpreted to some degree through Behaviorism, with the aim to reduce the apparent "subjectivity" of Gestalt thinking (Topper, 1983; Massironi & Cutting, 1998; Cutting, 2000). Arnheim (1951) reviewed Gibson's first book, and they saw each other for thirty more years, commenting on each other's work. At Gibson's death in 1979 and the release of *The Ecological Approach to Visual Perception* (1979) Arnheim (1979) had had enough and reviewed the book with exasperation: "I am in for another disappointment" (p. 121).

The goal of this paper is to expound both Gibson's and Arnheim's approaches to pictures and then compare them within a meta-framework, providing a way to reconcile their respective approaches within a more encompassing theory of picture perception. In Section 2 I acknowledge Gibson's proper outline of the nature of *representation* but affirm that Arnheim's approach fulfills the spirit of a semiotic theory ultimately better. After reviewing Gibson's evolving theory of picture perception, I review Arnheim's in Section 3. Then in Section 4, I appeal to phenomenological semiotics (e.g. Sonesson, 2016) to discuss the strengths and weaknesses of the two theories. By combining two apparently antagonistic fields of study, phenomenology and semiotics, phenomenological semiotics is crucial for my analysis, since it can show how signification is both based on, and can transcend, the Lifeworld. Once both theories are laid out, it will be seen how exactly Arnheim erred and how in spite of his error he still has important contributions, even of a semiotic variety, to offer picture perception.

2. Gibson's evolving theory of picture perception

Gibson had an evolving, sometimes confusing, theory of picture perception (Topper, 1983; Massironi & Cutting, 1998; Cutting, 2000). On one hand, he stressed the artificiality of picture. But he always regarded pictures, artificial as they are, as tied normatively to the real world and the task of pictorial representation to be related to recreating the appearance of, or at least "invariants" of, that real world (Gibson, 1971). Although Gibson disliked anything that seemed to alienate the mind from the world, and therefore the whole notion of "mental representation", he did like pictures. If one studies his diagrams in detail, one will notice that they show pictures, in the everyday sense of the term, among the furniture of life, as in his diagram of an "optical transition" (see Figure 1). The pictures line the walls of a hallway and one is found in the end room, the target of the subject's locomotion.



Figure 1. Pictures in the diagrams of J. J. Gibson, from "The Optical Transition from One Vista to Another," The Senses Considered as Perceptual Systems (Gibson 1966, p. 207)

Gibson was a relatively traditional researcher at the start of his career but had a revelation while studying the immense complexity of visual behavior, especially the skills of pilots landing a plane on an aircraft carrier. This led him to be suspicious of most experimental research, which was undertaken not in natural environments but the laboratory. The restriction of tested behavior to limited contexts, he believed, led to a falsification of our knowledge about the sensory systems. This led him to distinguish strongly between the visual *world* and the visual *field* (Gibson, 1950). The visual world is simply our world that we interact within; the visual field instead is a limited case of perception that explicitly or implicitly presumes that perception operates similarly as to when we perceive (primarily) iconic visual representation, i.e., *pictures* in the semiotic sense (Sonesson, 2016). As stated clearly by Gibson (1952, p. 149): "The visual field is a product of the chronic habit of civilized men of seeing the world as a picture".

The distinction serves as a *de facto* affirmation of representation, or signification (see Section 4), as the basis of pictures. This is arguably what nominated Gibson's theory for semioticians like Sonesson (1989, 1993), even though it carried forward the naturalistic presumption. This is seen quite evidently in Gibson's "A Theory of Pictorial Perception" (1954) where he affirms that "a picture conveys information" (p. 4) and "a faithful picture is a delimited physical surface processed in such a way that it reflects (transmits) a sheaf of light-rays to a given point which is the same as would be the sheaf of rays from the original to that point" (p. 14). In retrospect, this is quite a traditional, even provincial, view of the nature of pictorial representation. It articulates the standard goal of representation to serve as an "illusion". That is, the picture begins clearly different from reality, but upon achieving the illusion of reality, the experience of representation disappears. As will be explained in Section 4, Gibson affirms the differentiation and double asymmetry between picture and world, and hence to sign-status of pictures, and then seems to forget it.

It is important to highlight the naturalistic bias in Gibson because it points out the surreptitious and to some degree even anti-semiotic nature of Gibson's early theories. Gibson (1960) had to accommodate criticism based on caricatures. For example, in the caricature by the artist David Levine, drawn to accompany a book about Gibson (see Figure 2), we do not see a single line that has correspondence to Gibson's actual visage. Yet it gives a sense of his smiling manner. How could something convey truth – the special likeness that the exaggerated features of a caricature contain – when it does not have metric or optical similarity? This led Gibson to adjust his theory. Now he said that a picture "delivers a sheaf of light rays...that contain information about...a world which is not literally present" (Gibson, 1960, p.221). Now the picture does not recreate reality but merely the "information" associated with a potential scene. It in a sense recreates the optics of a scene, as if it were to exist. Aligning this idea to literary theory, we have passed from a theory of the "true" (the real) essentially to a theory of the "verisimilar" (the likely) (Dempsey, 1982).



Figure 2. David Levine, "James J. Gibson," New York Review of Books, from Gombrich (1989)

In his late phase, Gibson (1971, 1979) adjusted his theory yet again, now articulating the idea of information with the recovery of invariants. The visual system is intended to recover invariants of objects but the act of picturing something freezes these invariants into their kaleidoscopic transformations. This version of his theory is a clarification of the idea of pictures as occupying the space of the "visual field."

All the while, Gibson retains his distinction between the visual and pictorial world, the basis of providing an account of pictorial signification. But chronologically he advances toward a more developed semiotic theory by emphasizing differences between pictorial (e.g., caricature) and natural contents. In other words, his early theory treats pictures as a sign merely in name, because everything about his theory treats it as a kind of illusion – a mistaken presentation, not a re-presentation, and estheticians as well as semioticians like Sonesson (1989) have rightly discounted illusions from legitimate cases of representation (Feagin, 1998).

If the idea of asymmetry between expression and content of a sign is increasingly satisfied by his theory of picture perception, Gibson nevertheless remained ambivalent about the "second hand" quality of pictures. He affirms that like in language, in perceiving pictures one does not become "aware of something;" rather "one is made aware of something" (Gibson, 1954, p. 4). As Massironi and Cutting (1998; Massironi, 2000) argued, it was precisely the elements that distinguish pictures from the perception of reality that disappointed Gibson. In particular, Gibson does not seem to have fully appreciated the benefits of pictures in selecting subsets of information and providing a particular perspective on them. As we will see in Section 4, these feed directly into the definition of a pictorial

sign. Ironically, Gibson was interested in works that would erase the distinction between the visual world and the visual field and always remained uncomfortable with the notion of "representation" of any stripe – mental or otherwise.

3. Arnheim's theory of pictorial perception

Arnheim discussed pictures (with focus on pictorial *art*) constantly, being just as much at ease discussing a Medieval as a modern work. But one also notices that Arnheim was as apt to treat the problem of *pictoriality* in his books as unproblematic. For example, in a rare interview, he wrote,

The essence of an image (*Bild*) is its ability to convey meaning through sensory experience. Signs and language are established conceptual modifiers; they are the outer shells of actual meaning. We have to realize that perception organizes the forms that it receives as optical projections in the eye. Without form an image cannot carry a visual message into consciousness. Thus, it is the organized forms that deliver the visual concept that makes an image legible, not conventionally established signs. (Grundmann, 2001, unpaginated).

Here, Arnheim identifies "signs" with conventionality and imagery with organized form, which makes it able to contain (visual) meaning. This is a rather simplistic dichotomy of image producing "natural" meaning and language producing conventional meaning. However, when we look closer, we see that Arnheim actually does assume the idea of signification or representation; he just does not emphasize it.

We might say that Arnheim is fixated on the post-signification phase of our understanding of a pictorial work, when it simply becomes a substitute for a generic referent, its own thing. Interestingly, Arnheim argues that works of art have special affordances. For example, he writes: "The basic affordance of a work of art is that of being readily perceivable." (Arnheim, 1992, p. 12). This could mean that he does not wish to emphasize signification but it could also mean that the work is identified as an expression, somehow incomplete, begging to go beyond itself; this does resemble the classical Augustinean definition of the sign as something that directs consciousness to something other than itself. On the one hand Arnheim is referring to the perceivability of pictures and sculptures but on the other hand he is overlooking the fact that it is achieved through indirection. As we will see in Section 4, the picture or sculpture – qua useless object in the phenomenological Lifeworld – invites our understanding as a sign, and in some cases, as a work of art.

In his analysis of Ingres' *La Source* (see Figure 3), Arnheim is not concerned to discuss how we see the marks as a woman, but rather the way in which the artist is able to express ideas through his treatment of the theme. For Arnheim, the fact of representation is unproblematic, perhaps because it is ubiquitous. Needless to say, the nature of representation is never treated, which seems to be one of the main factors that has removed him partly from semiotic discussion. Indeed, everything Arnheim did was meant to complicate the – for him – too easy invocation of "denotation" in Goodman's (1968) manner emphasizing its conventional nature. A conventional sign was for Arnheim the least interesting mode of signification. But of course, to alienate all signification had consequences: it caused him to lose the opportunity to develop his work within a semiotic framework.



Figure 3. Diagram after Ingres, La Source, from Arnheim (1954, p. 147)

As an example of Arnheim's indifference to the fact of representation, which I've written about before (Verstegen, 2014), we can turn to his discussion of children's drawings in *Art and Visual Perception* (1974). Accepting that "shapes drawn on paper or made of clay can *stand for* other objects in the world," Arnheim (1974, p. 176, my emphasis) writes:

This discovery of the young mind is so specifically human that the philosopher Hans Jonas has described picture-making as the most decisive and unique attribute of man. We have no way of telling with certainty *at which point in a child's development he first takes his shapes to be representational.* Probably this occurs before he confirms the fact for the adult observer by pointing to his scribble and saying 'Doggie!'. Even after the stage has demonstrably been reached, there is no reason to assume that all the shapes he makes from then on will be perceived by the child as representational. The substitutional 'thingness' of the doggie stands on its own and need not refer, in general, to a real dog.

Amheim writes no more on this. This representational achievement is for him just another milestone in the development of the child's understanding of the world. As I pointed out elsewhere, there are precedents for recognizing signification in the Gestalt tradition and it definitely exists in the closely allied organismic theory of Heinz Werner (Werner & Kaplan, 1963) who – not coincidentally – worked also on language. In short, to quote Sonesson (2015), Arnheim "fails to explain that which [pictures] already have in common, which is, I submit, the property of being signs" (p. 263).

Arnheim was against invoking denotation or convention to do all the semiotic work. In spite of not naming the process of representation or signification, he is however clearly aware of it. If Gibson was unsure about the benefits of pictures, Arnheim's commitments fall squarely within those that similarly animate semiotics. That is, if a sign is an asymmetrical pairing of expression and content, and isolates elements that are thematically meaningful in their reference, this is found everywhere in Arnheim's writing. Merely the most famous is his discussion in *Film as Art* where he contrasts the differences between film and reality, which has the effect of stressing its interpretive role and its mode of precisely not appearing as a presentational medium of "primordial" presence.

We need not speculate on Arnheim's exact understanding of representation. He seems to have known Alfred Schütz's works at the New School but was unimpressed by the work that went under the name of "semiotics". Furthermore, as I show in the following section, the way that Arnheim works with levels of abstractness as tied to its sign-character seems to be informed – possibly via Schütz – of the Husserlian idea of the Lifeworld, thus aligning him at least to some degree with phenomenological semiotics.

4. Phenomenological semiotics

To to bring order to this discussion, I will here lay out some basic ideas of *phenomenological semiotics* – an approach to meaning combining concepts from phenomenology and semiotics, developed especially by Göran Sonesson (1989, 2016). Phenomenology is usually believed to disclose immediate, immanent experience (e.g., Sokolwoski, 2000). Semiotics is, on the other hand, often defined the science of cultural codes (e.g., Chandler, 2017). A phenomenological semiotics, however, combines aspects of both approaches and destroys the binary simplification of either. Such a framework allows us also to adjudicate between the approaches to picture perception of Gibson and Arnheim.

Turning back to Husserl and his followers, we may recognize sign usage as a special case of non-direct perception, thus providing a foundation of a rigorous semiotics based on the variable (and invariably cultural) *Lifeworld*, our multifaceted world of experience. A key concept here is *appresentation* as a kind of primordial perception that goes beyond a single "static" sense impression (Husserl, [1939] 1973; Luckmann, 1980). We can see that Gibson is not really interested in such an approach to representation (if not completely averse to it), whereas Arnheim is obsessed with it without, however, naming it directly.

Sonesson (1989, 2016) develops his phenomenological semiotics on the foundations laid by Husserl about the nature of both direct, and indirect (i.e. sign-mediated) intentionality, the directedness of consciousness towards the Lifeworld, the latter including both "natural" objects of experience and sedimented cultural values. What is natural can be different in different cultures. What is considered "prototypical" can change. Consequently, there is a hierarchy of prominence of the Lifeworld, as shown in Figure 4.¹

Sonesson's claim is that a sign (expression) will usually have a "low" position in the Lifeworld hierarchy of things. In most cases only something that is low on the hierarchy can serve as an expression for something else that is higher on the hierarchy. This is the case since the expression has no immediate use so it begs for an ulterior one. As Susanne Langer (1942, p.75) wrote, "peaches are too good to act as words".

¹ We can ignore at this point the "ultra-thing" (*ultra-chose*), abstract notions that cannot be directly observed like the world itself (see Wallon, 1963).



Figure 4. The Lifeworld Hierarchy (from Sonesson, 1998, p. 40)

Signs are thus evocations of intentional objects, both concrete and abstract (Schütz, 1962; Dreher, 2003). The logic of signification is brought out along with the Lifeworld, with its hierarchy of experience. This means that the world is replete with meaning, but only in some cases is the meaning due to signification. When this is so, a signitive act connects an expression and a content on the basis of a "semiotic ground," whether it be iconic (based on similarity), indexical (based on contiguity) or symbolic (based on conventionality), in most cases a combination of these. The criteria for signification according to Sonesson (2010, p. 24) are the following:

- It contains (at least) two parts (expression and content) and is as a whole relatively independent of that for which it stands (the referent);
- These parts are differentiated, from the point of view of the subjects involved in the semiotic process, even though they may not be so objectively, that is, in the common sense Lifeworld (except as signs forming part of that Lifeworld);
- There is a double asymmetry between the two parts, because one part, expression, is more directly experienced than the other; and because the other part, content, is more in focus than the other;
- The sign itself is subjectively differentiated from the referent, and the referent is more indirectly known than any part of the sign.

One of the key values of the Lifeworld is precisely the fact that it can change in different contexts and cultures. An adapted "baseline" will provide a semi-stable basis of signification but it will not fix reference permanently. Furthermore, moving along a spatial and temporal scale of signification will also produce different results. A series of small pictures in an otherwise empty gallery will invite us to look at them and try to interpret their significance in a way that plates on a table would not. But once in front of each picture, a new Lifeworld hierarchy would emerge. A drawing on hotel stationary, for example, would lead us to ignore the common letterhead of the hotel and focus on the drawing, and so on in a dynamic fashion.

Being a Gestalt psychologist, Arnheim is open to giving a rich account of parts and wholes and percepts in different temporal frameworks. His perceptual approach precisely can help us understand when and how something might nominate itself for signification. For example, for Gestalt theory an object can change its demand character depending on the goals of the individual. Arnheim's (not entirely successful) means for accounting for different meanings of the pictorial sign is found in the notion of *abstraction*. For one thing, the Gestalt notion of *Prägnanz* is a theory of symmetrical prototypicality (Arnheim, 1969; Goldmeier, 1982, 110-112). Asymmetry is recognized when he considers Hamlet's discourse on seeing a camel in a cloud. He wrote (Arnheim 1989): "A cloud can look like a camel, but a camel is unlikely to look like a cloud. This is so because the signifier must be able to stand for the whole category of the signified. The cloud looks like all camels, but no camel looks like all clouds" (p. 245).

As discussed in Section 3 Arnheim downplays signification because he only identifies it with conventional linguistic signification. However, he also does it because he has a normative theory of self-evident kinds of natural signs, which he calls "self-images." Arnheim (1966, p. 325) states that a self-image "visibly expresses its own properties." An example is a medieval sculpture of a saint; its abstractness suggests it is not referring beyond itself and instead it becomes its own entity. This is paradoxically a reversed theory of representation. He seems to think that a traditional picture that is quite like its referent utilizes a non-problematic form of representation, but not signification. This somewhat "romantic" notion serves as a primitive form of representation that instead operates naturally. Arnheim (1969, p. 136) writes: "An image serves merely as a sign, to the extent to which it stands for a particular content without reflecting its characteristics visually". This is a theory well posed to explain non-representational art to an unsympathetic public, but it is one-sided as a general theory of pictures.

Bur as we have seen, according to phenomenological semiotics both ordinary forms of naturalistic representation and the self-image should be understood as forms of signification. Even the way that Arnheim discusses self-images almost as kinds of effigies shows that he appreciates what they can offer the art viewer outside of the bounds of traditional signification. However, to the degree that they are presented in an artworld context and function as such, they are pictorial signs.

If Arnheim's theory of representation fails as a general basis of a pictorial semiotics, he nevertheless has important observations on the world within the picture; not the picture itself as sign, but the marks within it as signs for virtual objects. These relate to observations about iconicity-like elements in his definition of what he calls the "symbol" and the "picture." These relate directly to the Lifeworld Hierarchy, which Arnheim understands in terms of different levels of abstractness:

An image acts as a symbol to the extent to which it portrays things which are at a higher level of abstractness than is the symbol itself. [...] images are pictures to the extent to which they portray things located at a lower level of abstractness than they are themselves. (Arnheim, 1969, p.136, 137)

A Valentine is a simplified form that may *depict* the anatomical heart; but it *symbolizes* love, an abstract concept. A depiction of love would be "pictorial" to the degree that its object is concrete, like two lovers in an embrace. We can see here a shadow theory of the Lifeworld within the picture itself. Like the phenomenological theory of the Lifeworld that says that objects will be different in different cultures, Arnheim's theory offers a corollary by arguing that what can become a symbol or picture is determined by the "reality level" of the image. In Western cultures, a sheet of paper or a canvas is common enough to be "recognized as susceptible of embodying a sign function" (Sonesson, 1993, p. 41). But this could change in a different culture, where sheets of paper are far from common.

Analogously, the same figures in a Goya or Picasso can give rise to different understanding depending on the overall style of the picture. In some remarkable observations in his book *Genesis of a Painting: Picasso's Guernica*, Arnheim (1962) distinguishes between *allegory, monstrosity* and ordinary presentation. Picasso's works are not distorted because of the overall abstractness of the style; any "distorted" figure must be seen relative to the others in the picture and as a result they create a consistent reality level. Picasso's *Guernica* (Figure 5) for example, is executed in a consistent style with each figure treated in an equivalent manner.



Figure 5. Pablo Picasso, Guernica (detail), 1938, Madrid

In contrast, Bosch's creations include materially solid fantastical beasts, depicted in a matterof-fact manner, with full plausibility (see Figure 6). Since these beings are impossible at this reality level (contrary to a Picasso world) they must be interpreted as monstrous.



Figure 6. Heronymous Bosch, Last Judgment (detail), 1482, Kunsthistorisches Museum, Vienna

Turning to Goya, Arnheim writes: "Goya...in the final etchings of the *Desastres*, tells no fairy tales. He introduces creatures that make no self-sufficient sense in the world in which they are presented. Therefore, they must be taken as allegories" (p. 21). Contrary to Bosch, all of whose figures are monsters, Goya selectively depicts unusual figures. In #71, *Contra el bien general (Against the common good)*, an old man with bat wing ears sits over a book (Figure 7). One cannot reconcile the image according to an ordinary Lifeworld, and allegory – an image standing for a concept – comes to mind. In this sense, Arnheim's unorthodox approach gives hints to interpreting the Lifeworld Hierarchy within the painting.



Figure 7. Francisco Goya, Contra el bien general (Against the common good, c. 1814-15, Desastres de la Guerra, #71

5. Conclusion

The goal of this paper has been to clarify the reasons for the adoption of aspects of different theories of picture perception within semiotic theory. I have argued that Gibson's fundamental distinction between the "visual world" and "visual field" immediately aligned with the semiotic differentiation between direct perception and pictorially mediated signs. Yet his theory was flawed in different ways, which inhibits its absorption into semiotic thinking in any significant way. In particular, his orientation toward naturalistic art, whether articulated in terms if optical imitation, information or

invariants, does not help in the analysis of the Lifeworld and the understanding of the ways in which elements of perception can serve as expressions for signified contents.

Arnheim, instead, emerging from Gestalt psychology which shared the same intellectual heritage as phenomenology, was oriented to many of the same things that can lead to an adequate analysis of the Lifeworld. However, as explained, Arnheim is evasive of the very problem of signification because he mistakenly believes that signs are always conventional and language-like. With a proper reorientation of his thinking, and specifically the posing of the problem of signification as superseding the phenomenal Lifeworld, his thinking becomes quite amenable to visual semiotics and especially a phenomenological semiotics. This is demonstrated in Arnheim's interesting comments on the "reality level" of the virtual worlds of pictures. His concept resembles that of the Lifeworld Hierarchy, where deviations from that level lead to inferences of monstrosity or allegory.

I suggest that this is why Gibson – the lover of realism – paradoxically became a hero for phenomenological semiotics, while the constructivist Arnheim was somehow left with the naïve realists. Gibson's focus was to explain the ability of direct perceiving (i.e. not mediated by representations) and for this reason had to create a category of perception for pictures. Arnheim felt the same way about the naturalness of pictures as he did about direct perceiving and for that reason neglected representation as a problem at all. The Gestalt orientation against intellectualism is reflected in David Katz's gentle challenge to his Berlin friends quoted at the outset of the article: "But what is a symbol as seen by Gestalt psychology?". We may conclude by speculating that Gestalt psychology would have had a better theory of pictures if it had a better theory of language; not because language is fundamentally different from perception but because it is absolutely and without exception based on signification in a way that perception is not.

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