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ARTIFACTUAL AFFORDANCES WITHIN TASKSCAPES

AFFORDANCES ARTEFACTUALES DENTRO DE ESPACIOS DE TAREA

Jesús Vega*
Universidad Autónoma de Madrid
Madrid - Spain

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ABSTRACT

A particularly significant aspect of our cognition is organized through the detection of (and in response to) affordances in our interaction with things. Sociotechnical spaces are fundamentally interactive spaces where humans and things meet and are knotted together. In this paper, I will introduce Ingold's notion of "taskscape", understood as a complex array of activities, in order to analyze the type of affordances the agents respond to within interactive spaces of artifacts. I am interested in how material artifactual culture ties meaning and matter together by making available affordances within a mutual environment composed of a set of related activities, the taskscape. Intentional affordances for artifacts are specified as practical landmarks that guide actions and reveal purposes and uses, the core of the meaning of artifacts in culture.
Key Words: Artifacts, taskscape, affordances, things, material culture, materiality, intentional affordances.

RESUMEN

Un aspecto particularmente significativo de la cognición se organiza a través de la detección de (y en respuesta a) affordances en nuestra interacción con las cosas. Los espacios sociotécnicos son espacios interactivos en los que se encuentran y se anudan humanos y cosas. En este artículo, introduzco la noción de Ingold de "espacio de tarea" (taskscape) que se entiende como una formación compleja de actividades en vistas a analizar el tipo de affordances a las que responden los agentes en espacios interactivos de artefactos. Me interesa cómo la cultura material artefactual liga significado y materia al hacer disponibles affordances dentro de un entorno mutuo compuesto de un conjunto de actividades relacionadas, el taskscape. Las affordances intencionales de los artefactos se especifican como balizas prácticas que guían las acciones y revelan propósitos y usos, el corazón del significado de los artefactos en la cultura.
Palabras Clave: *Artefactos, espacio de tareas, affordances, cosas, cultura material, materialidad, affordances intencionales.*

Cognition is a form of interaction in which organisms engage with the environment to generate meaning. Humans enter meaning by interacting with things; humans inhabit interactive environments of things. Most of these things have technical reality: they are, on the one hand, the result of technical transformations; on the other hand, they create vectors in a continuous space of further transformations. They indicate paths to take advantage of possibilities of action that the environment offers. The organism then regulates its activity as based on the perception and identification of features in those environments in which its activities take place. This is what we call *affordances*.

* Autor correspondiente / Corresponding author: jesus.vega@uam.es
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A significant aspect of our cognition is therefore organized through the detection of, and in response to, affordances in our interaction with things. Technical (sociotechnical) spaces are fundamentally interactive spaces, where humans and things meet and are knotted together. In the first section of this paper I will analyze the material dimension of artifacts with the aim of overcoming dualisms around the binomial mind/matter, dualisms that prevent us from understanding how artifacts are the fundamental pieces of material culture. In order to do this, I discuss a set of interrelated concepts, such as matter, materials, and materiality. My aim is to argue that we cannot dispense with any of them if we want to adequately identify what are the active and meaningful features in the material dimension of things are what genuinely makes them come alive and contribute to agency. The first section has the purpose of opening the possibility for meaning to emerge from the interaction with what I will call active matter and to be revealed through the perception and identification of features that are materially constituted, the affordances. In the second section, starting with a brief commentary on how the technical gesture knots together matter and meaning, I address the persistent difficulties in specifying the affordances that are characteristic of artifacts and that, as we know, cannot be simply identified with those properties that account for their function. I suggest that it is necessary to offer a theory of affordances that identifies the adequate level of analysis when it comes to articulating the material dimension of things with meaning. I argue that this level of analysis is provided by what Tim Ingold has called a "taskscape". I will argue that this notion helps us with determining how artifactual affordances become salient within a field and help organizing the activity. Artifactual affordances come into existence when agents learn to jointly respond to the same set of features within the context of interrelated activities in which they are engaged. So material artifactual culture ties meaning and matter together by making available affordances within a mutual environment composed of a set of interrelated activities, the taskscape.

I

We inhabit environments full of things. Most of them are the result of skillful interventions that transform matter and objects. They are artifacts[1]. As it has been frequently remarked, artifacts do not exist isolated; they compose a dense network of artifacts and agents, with multiple lines of interaction and varied trajectories of meaning. Each artifact refers to other artifacts, and knots agents together through the activities they are engaged in.

The traditional discourse on artifacts has been organized around three notions: intention, form and function. Human intentions determine the nature of the artifact, because it acquires a form/structure that makes possible the manifestation and exercise of a function through the embodiment of agent's intentions on matter. The mind imposes a form on matter that is considered sufficient for the exercise of a function; the idea of the artifact guides the intentional action of the maker who achieves the production of the artifact according to what the intention dictates. The maker/author fixes and guides the action; he is the only depository of intentions and the only one capable of creating the meaning that is now "embodied" in the object. Matter is the support, the receptacle, of his making; matter is molded according to his guiding idea, an idea that becomes the conceptual guarantee that the artifact is what it is *qua* artifact.

Current philosophical views on artifacts regard them as hybrid entities, composed of intentionality and matter[2]. But, at the same time, they face insurmountable theoretical difficulties to adequately articulate both dimensions. The previous model of the mind imposing concepts on matter, which is deeply rooted in Western thought, reappears constantly under different guises.

Let me propose a metaphor to talk about artifacts. Suppose we treat them as knots, ties in which different threads are stretched so as to make agency possible. Artifacts are knots of active matter and meaning. First caution: we shall not take the threads as the different aspects that constitute the hybrid character of an artifact, the thread of the intentional posed by the author/agent and the thread of the material as already given. My use of the knot metaphor seeks to emphasize a somewhat different point: the interweaving of threads whose identity fades as they are taken separately, for they are now inextricably intertwined. This requires reconsidering each of them, the very idea of matter and that of mind (intention, meaning). I will focus first on the notion of matter.

Artifacts are elementary pieces of material culture. I will define material culture as things in

so far as they are intertwined with and involved in human activities. Hence, artifacts are not reduced to intentional products (as suggested by the dichotomy natural/artifactual). "Artifactual" includes everything that (being material) is involved in agency and enters into relationships of meaning within a cultural niche. But how should we understand this material dimension as an element of culture? For many, a first exclusion does not pose big trouble: it is not primarily about matter as it is characterized by a set of physical properties. True, we can (and should) study an artifact from its physical properties, such as its hardness, density, porosity, etc. But it also seems clear that this description in physical terms does not, as such, give us the meaning of the artifact *qua* artifact. Maybe what we are looking for is what studies of material culture have dubbed the *materiality* of the artifact (Miller 2004, Tilley 2007). However, both its defenders and detractors do not advance a precise definition of the term. We face several threats by using it: the first one is emptiness, to the extent that materiality basically refers to how things matter and are involved in social life: the focus is now on how people perceive and understand them as endowed with certain material properties, and we seem to lose of sight the material as such. The other danger is that of recreating the dualisms of mind and matter. Tim Ingold, in flagrant opposition to a certain line of studies in material culture, suspects that the notion of materiality hides in the background a dematerialization of objects and materials, of that of which things are made, when finally neglecting the bodily and sensual contact with materials (Ingold 2007, 2013). The unsuccessful attempts to understand material culture and the notion of materiality, Ingold suggests, are based on the fact that they seem to identify two aspects that remain separated: "On one side is the raw physicality of the world's 'material character'; on the other side is the socially and historically situated agency of human beings who, in appropriating this physicality for their purposes, are alleged to project upon it both design and meaning in the conversion of naturally given raw material into the finished forms of artifacts" (Ingold, 2013, 27). This Janus-face of materiality reproduces well-known dualities. According to Ingold, we leave aside the importance of the materials themselves, of the substances we engage with, and focus all our attention on objects (as compounds of matter/form); we also lose part of the vitality of our experience with materials, for example the experience of tactility. The only way to have a grip of how things are made and "act" goes through paying attention to our engagement with the materials themselves, Ingold claims.

We therefore have three concepts that could help us to articulate the material dimension of artifacts: matter, materials, and materiality. Each of them identifies an aspect of the material, but also seems to encourage the development of theoretical lines in opposition. No one would be willing to deny that matter, as a set of physical properties, is what artifacts are metaphysically composed of, and that from an engineering point of view it is sometimes the manipulation of these properties that sustains the making of new artifacts. It is equally obvious that, in our "doing", we depend on materials, on substances and on the means we work with. But materials, in fact, are nothing without those who work on them and with them. Ingold sums it up in the idea that the properties of materials are stories and not attributes, possible ways of getting involved with them; we know them by doing things with them, by seeing what happens to them, by dealing with them, and so on. "Practitioners know them by knowing their stories: of what they do and what happens to them when treated in particular ways" (2013, 31). This dynamic character of the materials, however, does not trace socially shared and culturally embodied meanings. Hence, many theorists feel the need to insist on an idea of materiality where the material and the socio-cultural dimensions shouldn't be kept separate. Here the material (in spite of its purely abstract characterization) is seen from its importance and significance for people's lives; the material comes to life through its social significance, while it is at least the privileged *interface* in the transactions between people and things. To consider the materiality of things (of artifacts) and not only the materials with which we make them is a way of attending to their meaning and their possible agency (Tilley 2007).

In a certain sense, we would not want to abandon any of these concepts if our aim is to account for how the meaning (the cultural content) *is* material. To insist exclusively on the material properties that compose the artifact and to characterize its hybrid nature from the intentions of makers and/or users of the object is a way to bring back a dualism which is difficult to overcome. At most, the meaning that we link to artifacts and things is projected onto an organized piece of matter (through

an exploitation of its known properties) from the ideas of designers, producers and users. According to this view, materiality is better understood through the (metaphysical) relation of realization of higher-level properties on more basic levels. Michael Wheeler (2003), in a different context, has called it *implementational materiality*. This is a way of understanding the relevance of the material dimension of things, which in this case is reduced to implement a functional role: what matters is to physically realize certain causal roles (all this in the context of functionalism as a general philosophical conception of the mental). The meaning of things is external to their materiality; it derives from how function (implemented in matter) is understood by agents according to independent cognitive processes that project meaning onto the object.

For this reason, the alternatives have to come from a notion of materiality (either relative to the materials, or to the socio-cultural dimension of the material) which avoids this projective reading. Wheeler himself proposes a notion of *vital materiality* to characterize all those references to the material that require an active involvement with matter and materials, in which the causal efficacy of "the material" is the fruit of an interweaving of aspects that dye the phenomenology of our experience of doing with matter. The meaning is enacted in this exchange with the material. Lambros Malafouris bases his material engagement theory on this materiality that comes to life in the hands of the potter on his wheel (Malafouris 2008). This second conception of the material emphasizes how the matter of the things with which an agent interact contributes effectively to shaping our cognitive and meaningful life. Things themselves come to life. Their materiality is that of our life.

For many, this last comment confronts us with an insurmountable dilemma: either we consider that the meaning we attach to material things is a mere projection of mind towards matter; or in order to give life and meaning to things we are required to animate matter itself. Therefore, the question we have to answer is the following: how to understand this vitality of the material in the artifactual knots without assuming that matter itself is animated?

Some theorists of material culture have tried to answer this question by raising the stakes. Things, artifacts, are not only endowed with a certain life but are also capable of agency; moreover, they are capable of material agency. I am not going to discuss here whether or not it is convenient to adopt this theoretical commitment. I think that making of things themselves agents in their own right leads to theoretical confusion, even if one accepts the methodological value of changing our attitudes towards things as elements of material culture and *treats* them as exhibiting agency. We can take things as essential aspects of the exercise of (human) agency, and so emphasize that every (human) agency is material agency[3]. Artifacts, as knots of matter and meaning, are key features in our agential involvement in the world; it is primarily through our interaction with them that we succeed in initiating temporal trajectories with causal consequences. With this, I also want to point out that material things and artifacts as materially constituted do not only play the role of being constraints, limits, resistances, or conditions for agency. Rather, the idea is that material culture as an expression of agency is, therefore, a condition of its fullest exercise.

I characterize artifacts as knots of active matter and meaning. Let's define *active matter*. Matter is inanimate, yes; but not therefore inactive. Matter possesses active powers in so far as it contributes to modulate our activity of involvement with things. By the material dimension of artifacts, I refer to this way of being active of things that is inseparable from the forms of human activity, from the vital and socio-cultural trajectories in which those same things are inserted. Lambros Malafouris, in his 2013 book, suggests that this active dimension is detected only from a fetishistic attitude that underlies all material involvement (Malafouris 2013, 134). I don't think this is necessarily so. Even a so-called objective conception of the material could reveal an active dimension when it is seen in a broader framework of activity in which even a purely informational view of the materials makes sense. What is at stake in the treatment of the material dimension of the material culture is a (culturally mediated) diversity of ways of engaging with the properties and qualities of matter (Nye 2007). Hence there is always an aspect of mediation in any activity with matter, even in very different ideological conditions, through which we see it and deal with it.

What about meaning? Wasn't this the heart of an understanding of the artifact? Where is the cultural content proper to the artifact located? Isn't it located in ideas shared by human groups? And what do this have to do with the active matter we

have talked about? How is meaning tied to matter? We have seen that, in a certain way, matter becomes active only in the artifact viewed as a knot, that is, when it is subject to a certain dynamic activity in flows of interaction and exchange with humans. Something similar must be said about meaning. What experience of the knotting of meaning with active matter, a knotting that is visible and perceptible, can we appeal to in order to lay the foundations of this model? I propose to briefly pay attention to the inseparability of gesture and matter; and, from there, it will be easily revealed how in addition our perception of artifacts responds to significant properties that are materially constituted, which Gibson (1966, 1979), and after him many others, has called affordances. In the second part of this paper, I will show how artifactual affordances are specified in taskscapes, sets of activities that are carried out in the reproduction of (social) life.

II

In the beginning there was the gesture. Think of the technical gesture as conceived by the anthropologist Leroi-Gourhan in his work *Le geste et la parole* (1964). In gesture this knotting of matter and meaning is already expressed with some complexity. The technical gesture is subjected to a certain dynamic of rhythms, to a regular repetition of exchange with matter in which an identifiable "idea" takes on meaning[4]. Its importance lies in the fact that it makes public an idea whose support is the materiality of the instrument itself and of the materials on which it acts, an idea that is not the origin from which the actual form emerges. Form and "idea" are revealed in that exchange, in the dialogue between the materials and the maker. The gesture demands a certain attention and, equally, a certain way of attracting this attention. The gesture lacks intelligence if it does not express a visible meaning in this engagement with the material. In the gesture, a practice of meaning is manifested that only takes on reality as materially constituted. Leroi-Gourhan rethinks the complex relationships between function, form and matter for artifacts. I cannot enter into the details, but I can highlight an element that may perhaps go unnoticed: in the gesture that reveals intentionality (in its more basic layers, but also in more developed ones), a space remains open for a free interpretation of the relations between form and function (meaning) of the artifact.

Each gesture takes advantage of affordances, but also serves to specify them and make them salient to each other. That is why they play an essential role in shaping our technosociality, and fixing the affordances of the artifactual realm. It is to these aspects that I would like to dedicate the rest of this paper, because they can help to see how meaning and matter are knotted together through artifacts.

Since Gibson coined the term affordance, it has been widely used and extended to many fields. Some of the original Gibsonian intuitions are not always easily preserved: perception, for Gibson, opens up to a meaningful world as possibilities of action that are revealed through interaction, what denotes the mutuality of the organism/agent (and its abilities) with the environment in which it operates. It is well known that Gibson was interested in bringing to the forefront a conception of the agent in his environment whose relationships are not to be seen as mechanical exchanges but as generators of meaning. First, Gibson claimed that affordances do not cause the behavior of the organism. At best, they constrain it and make it possible as well. Second, meaning and value are not notions alien to the world in which an organism acts: they are reintegrated into the environment as affordances that are significant for the organism/agent. "The meaning or value of a thing consists of what it affords" (Gibson 1982, 457). On the other hand, the organism directly perceives these possibilities of action to which it is adjusted within an appropriate niche. Without entering into the cumbersome ontological debate that is still going on about them[5], my insistence goes to that they always exhibit a relational and interactive dimension; that is, an affordance is correctly specified only as relative to a framework of interactions.

Things and artifacts characteristically exhibit affordances; they offer possibilities for action to organisms endowed with the corresponding abilities. Though Gibson didn't mark a boundary between natural and artifactual elements in the environment[6], the detection and specification of affordances for artifacts seem to involve particular requirements. Here I mention a couple of them: first, artifacts can afford many actions and not all of them are attuned to what the artifact is for (what the artifact *is* or *means*); second, if artifacts are basically characterized by their functions (or intended functions)[7], the perception of affordances cannot directly give us the function; it is rather

inferred from a prior detection of canonical properties of the object. Then, it is hard to see which affordances need to be actually perceived, or which invitations to act the agent needs to respond to, if he is sensitive to the artifact *qua* artifact. That is, the possibilities for action the agent encounters are not neutral or indifferent, they seem to correspond to the object itself, and at the same time they are just a selection of the multiple possibilities of action afforded by it, a selection that would guide and control behavior only under the assumption that they correspond to something that is not directly revealed -what the artifact is for. But this aspect that should be revealed does not seem to be an affordance or a complex of affordances.

Let me introduce a simple example to elucidate the difficulties that any theory about the affordances of artifacts encounters. In front of me I have an ordinary hammer whose handle is perceived by me –an animal endowed with certain abilities– as "graspable". It is obvious that, if I finally grasp the handle, my behavior is not caused by the affordance once detected. But it is also evident that the affordance as such constrains what is in my hand to do and contributes to control, in some way, my behavior toward (and with) the object. The object then appears in the form of a certain "possibility of action". But affordances are not just "possibilities of action". If one takes seriously the idea that affordances are linked to what is valuable for the organism in its environment (that is, in the environment in which it exercises its action/agency) we should not accept a view of them that lets open a space for indifference. On the one hand, affordances do not delimit, therefore, a domain of what is merely possible; possibilities should be real, that is, capable of being enacted under certain conditions available to that organism in that environment. On the other hand, they manifest themselves for the organism as demands, at least in conditions of attentional salience[8]. The object "is given" in the form of "being possible for me in this context to act in such a way as the information specified by the object demands from me".

Now the information that once perceived could "invite" and guide my behavior in the right way needs to become salient *under the assumption that the artifact is for doing such and such*. Remember the hammer as graspable. It is obvious that the hammer can be grasped in many different ways; but only some of them are *attuned* to the requirements aligned with what the artifact is for, which could at its turn be multiple and diverse, and specified at different levels and with different goals in view. What is the hammer for? Hitting in general? Hitting nails? Is hitting demanded by the hammer in the very same way in which it appears as graspable and solicits my act of grasping it? Does the hammer reveal both aspects at the same time? As sequentially ordered?

As many authors have suggested, affordances –particularly in cultural settings– do not appear isolated, and very often they are nested in groups of affordances that are dynamically "discovered" and "specified". Artifactual affordances are not inherent to one isolated artifact; they are determined for networks, more or less dense, of other artifacts (Costall 2012). They form a "constellation" (Keller and Keller, 1996). But they can do that because in the dynamics of interaction with them they reveal complex relations between actions and goals (for instance, means-end relations); one could even say that artifacts hold together because affordances do, that is, they specify information that is given as requests to organize dynamically the interactions under the control of certain goals that need to appear as transparent for the participants in the task.

Recent literature on affordances has introduced an interesting distinction between the landscape of affordances and the field of affordances (Rietveld and Kiverstein, 2014). A landscape refers to the total set of affordances that are available in an environment and in a particular time for organisms with a certain way of life; this set of affordances constitutes their ecological niche. The field is composed of the affordances an individual organism engages with because they are salient given its interests and concerns (Ramstead *et al*, 2016). They are now experienced as solicitations and help explain the dynamic coping of the organism. The field seems to make a selection of affordances in terms of salience, but these saliences are now relative to very contingent factors and variables (such as the needs of the organism, for example) that become explanatorily determinant. Maybe as it should be.

Thus, action possibilities available in a certain niche, part of the agent's landscape, might not be salient for him; and, therefore, a theory of affordances should determine how these become salient and

hence how they 'organize', so to speak, the activity. This is how they become enacted as "meanings" and "values". And if one does not want to recreate the dichotomies that obsessed Gibson (this is, to make of the meaning something inherent in the world or to turn it into a mere projection of our minds) it is necessary to identify the level of analysis at which affordances manifest themselves as what they are, those features that ultimately articulate things (in their materiality) with meanings.

As I previously suggested, human agency is extended agency: it is agency mediated by things (artifacts) and depending on a complex network of relationships within an environment rich in representations, affective reactions, shared capacities, plans, abilities, etc. Artifacts are part of that environment in which our agency makes sense; they are "knots" in which human action is articulated. Only in this sense we can claim that things do "act" as well (Vega-Encabo 2011). We cannot say, on the one hand, that artifacts are simple passive and indifferent receptacles of our agency (as instruments or simple prostheses); neither are they genuine centers of agency (Vega-Encabo 2009), since they do not conform a point of view that is involved in a world responding to rational or normative demands. What must be understood is how they intervene in the conformation of our space of human agency and thus also become, in a sense, the result of that action. With artifacts, the world around us is not merely presented as an object whose behavior I can predict and explain; it manifests itself first and foremost as a demand for an evaluative response around which a certain action makes sense.

As agents we respond to meanings and values that, in a certain way, we can discover in our cultural niche. We tune in to them and, to that extent, we are able to identify certain purposes that become available so to say in the environment. And we become thus sensitive to certain demands. The action we deploy around (and through) artifacts serves to reveal these purposes and demands. This tuning is done through the detection of their affordances. The affordances constitute, so to speak, the potential of mediation that the artifact exhibits in certain situations of agency and engagement. They are like practical landmarks that orient and guide action through the object.

1) Affordances are practical landmarks in an environment full of things and agents that becomes structured for an organism capable of orienting itself within it.

2) Affordances emerge from the interactions between things and agents; therefore, they are features that are fixed for a niche as a whole and not for the object as such.

3) Affordances are specified relationally and dynamically through the skillful interaction with things[9].

Where do artifactual affordances reveal themselves and become salient as practical landmarks that guide our actions? I want to suggest that the notion of taskscape, introduced by Ingold (1993) in some interesting reflections on the landscape and its temporality, is the right one; in fact, I consider the notion to be a genuine derivation of the notion of environment proposed by ecological psychology. As Ingold defines it, a taskscape is an array of related activities just as a landscape is an array of related features. Remark that the primitive notion is not that of feature or property but the notion of "activity". Activities are teleologically oriented, exhibit a dynamic and temporal dimension, and are organized around tasks carried out by skilled agents. Ingold writes: "It is to the entire ensemble of tasks in their mutual interlocking, that I refer by the concept of *taskscape*. Just as the landscape is an array of related features, so –by analogy– the taskscape is an array of related activities" (Ingold 1993, 158).

Tasks can be built through what Leroi-Gourhan (1964) and with him many other archeologists (see for instance Schlanger 1994) have called "chaînes opératoires", operational chains in which actions, gestures, instruments, agents, and materials, are organized and knotted together. Nevertheless, it is characteristic of the taskscape that the different activities cannot be parsed in discrete units; they form a continuum of activity whose purpose is the reproduction of life in an uninterrupted flow of daily rhythms. Crucial for the taskscape is the fact that it usually involves people working together, in such a way that, even if performed in isolation, activities always point to a social horizon in which they are inserted. People, when performing their tasks, enact conditions of mutual attention, "*attend to one another*" (Ingold 1993, 160). Attentional needs can be more or less stringent, and correlate with the capacities and skills the agents possess. Moreover, different forms of attentional engagement can help define different *forms* of taskscapes for

different species and cultures[10]. This aspect of people's engagement in the taskscape is essential to make affordances salient and adequately specify the "invitations" that normatively demand agency through tools and artifacts: it is by attending to one another in performing tasks that the responses of an organism to the affordances are framed and the affordances themselves specified, not just discovered. Minimal forms of attentional focus in interrelated tasks can provide the means for organisms to become attuned to the very same material/artifactual possibilities of action. It is obvious, at the same time, and as we will see in more detail later, that a world of artifacts imposes more stringent attentional demands on the participants, particularly a capacity to read others' attention and also their intentions, and engage in activities that require joint attention. The form of the taskscape changes correspondingly.

As it has been argued by Gamble, the taskscape surrounds the individual, moves with him and, above all, provides affordances, practical landmarks which normatively shape his behavior and the paths (physical and cognitive) he is able to follow (Gamble 1999, 138). It is through taskscapes that organisms are able to construe rich landscapes of affordances[11], and build their cognitive niche through a continuous process of enlarging the tasks and organizing the human time and space around them. In fact, activities in the taskscape are grounded in the perception of affordances under conditions of mutual attention in such a way that they help to organize the activity and make salient to oneself and others a set of possibilities and constrains that otherwise *would not exist.* Affordances come into existence in the flow of the activity, and they come into existence because they contribute to hold together agents and things. Affordances also contribute to account for what the artifact is *qua* artifact (without a commitment with a process of inscription of form on matter), because it can be now identified as a center of meaning for the people that shape their activities through the detection and exploitation of an appropriate and recognizable set of affordances.

Thus a taskscape becomes this context in which organisms can effectively exploit the affordances of a meaningful environment –sustained by modes of attentional focus "shared" among individuals. As I have suggested, depending on the *form* attention can take, many different modes –more or less "intentional" or "shared"- of the taskscape are available. The idea is that, within the taskscape, the response of the organism to the affordances is already mediated by the resonance of the activities among individuals and the attentional relations in which they can engage.

The mutuality is shown in how gestures fit to affordances; these are completely specified only when gestures are accomplished with their rhythmic and continuous sequence. Through the attunement of gestures and features of the objects, the artifacts become part of the taskscape and get their meaning. But simultaneously they contribute to create the time and space of human action, and not just cultural forms (Leroi-Gourhan 1964).

Let us remember our main objective: to identify points where we access meaning from material bases without falling into dubious dualisms of mind and matter. The life of meaning is anchored in the activity that allows us to knot with matter. The affordances of things, of artifacts, specified in a taskscape of activities, are the path towards meaning. But more must be said about the specification of affordances for artifacts in cultural niches.

In the traditional theory of affordances, they are specified according to the biomechanical properties at play in the interaction. Both material properties of objects and sensory-motor abilities of animals are therefore important. The type of affordances that become salient depends either on the selective history of the animal or on the physical adjustments between the animal's body (with its abilities) and the dispositions of the objects. The interaction and manipulation of the object can reveal many of these salient affordances given the biological and physical configuration of the organism. For that reason, the examples of affordances tend to emphasize a connection with the motor behavior of an organism. Then, when we use a tool, the affordances that are immediately "given" to us (for instance, those having to do with how the tool should be manipulated) do not necessarily illuminate its intended use.

As we have seen, there is a certain consensus that the function of an artifact is an abstract element that is not directly revealed in perception. Whether it is defined by the purpose of an artifact or by the mode of operation, the function is far from being directly perceptible. Perceived affordances cannot simply be identified with the functional properties of artifacts, even if they have to do with

some aspects related to their function. Hence, for many, the identification and understanding of the function of an artifact has to be viewed as the result of a theoretical-inferential process that is based on the properties of the objects themselves and does not have to do solely and exclusively with affordances. The very understanding of an artifact in terms of its function requires a cognitive complex that exceeds the (perceptual) identification of affordances. Moreover, even if one thinks of the perception of affordances as a constitutive dimension in understanding, it would seem as if it were necessary to distinguish between two stages: a first one in which the agent notices the affordances of an object, as those material properties that afford a multiple and variegated set of action possibilities (fixed in relation to the abilities of the organism), and a second one in which the agent is capable of exploiting some of these possibilities according to a conventional criterion that fixes the intended use of the object, as if the social/conventional environment selected among the different affordances. Fearful dualisms threaten again.

In a previous paper (Vega-Encabo and Muñoz 2018), I have argued that artifacts call for a particular way of specification of affordances, a specification that requires a shared intentional understanding. Now I am advancing that this understanding depends on how artifacts intervene in the complex array of activities of taskscapes, where things and humans are entangled (Hodder, 2012). Some affordances exist as possibilities of action only under certain conditions of interaction that involve intentions, not as its hidden aspects of the mind but as perceptually accessible in the interaction itself. I call these affordances, following previous work by Tomasello (1999), *intentional affordances*. He establishes a contrast between those affordances that are specified relative to the sensory-motor abilities of an organism/agent that explores objects in its environment and those affordances that need to be specified relative to the social (and cultural) abilities of an organism/agent capable of social learning. The latter kind of affordances just comes into existence when there is a certain context of intentional relations that involves the object (artifact) and other intentional agents. It is not that we conventionally select among a certain set of affordances; it is rather that these are only exhibited when certain intentional relations are enacted. These are based on the understanding that the organism/agent has "of the intentional relations that other people have with that object or artifacts -that is, the intentional relations that other people have with the world through the artifact" (Tomasello 1999b).

Certain taskscapes require from their participants cognitive abilities that demand shared attention and even understanding of intentional states; but the taskscape is the context in which intentions and purposes are *open* and *shareable*. We are introduced to the realm of the artifactual within taskscapes; it is a privileged context to become attuned to the normatively significant affordances that objects show when intervening as essential elements of tasks. Meaning shows itself as tied to the object whose affordances people regularly take advantage of to perform their tasks, to carry out their complex network of interrelated activities. Artifactual affordances exist (as "adequately" specified) only because people become habituated to jointly respond to the very same features. They exist as features that guide and constrain the activities people perform for their accomplishment. When we adequately perfor certain tasks we respond to them in such a way that required corrections and improvements become demands for achieving the task. Those that participate in the taskscape and are really attuned to the relevant affordances of the artifact develop a sensitivity to how and when things go wrong.

Thus the existence of the intentional affordances of artifacts is not the outcome of agents projecting their prior intentions into the matter. The fact that artifacts exhibit intentional affordances only within a space of shared intentions does not mean that these intentions are embodied in the artifact from the outside. Remember that purposes grow in the interactions that knot together people and things within a taskscape of activities. Intentional affordances are just those possibilities of action that become available within the taskscape because participants are able to respond to the intentional relations other agents maintain with things. The rhythmic resonance of the taskscapes brings to the foreground these intentional relations in such a way that now the artifact that knots together people and other artifacts is seen as affording certain actions and consequently as input to form intentions. Malafouris gives expression to this idea in his theory of the material engagement: "The

artefact should not be construed as the passive content or object of human intentionality but as the concrete substituting instance that brings forth the intentional state" (Malafouris 2013, 33). Now intentional affordances of artifacts correlate with intended uses, with the accomplishment of a more or less fixed set of goals in the array of activities in which they intervene. Functional fixedness is the effect of the temporal continuity in the sort of activities of the taskscape in which artifacts specify stable sets of intentional affordances. Intentional affordances become stable insofar as participants in the tasks with the artifacts are sensitive to the normative demands others identify as proper of them. Only in this way meaning and matter in the artifact are knotted together: through the intentional (and social) resonance in the activities we share with other participants in taskscapes.

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NOTES

1 I am using the term "things" to include all items that are part of our material culture; I prefer this term to that of "object", that refers to the traditional contrast subject-object, though in some contexts I use both terms with the same meaning. Artifacts are viewed as things under the consideration of being the result of technical actions.

2 Hybrid views in philosophy have been defended by the so-called dual nature theory of artifacts. See Kroes 2012. An introduction to philosophical views in the metaphysics of artifacts can be found in Preston 2013, Thomasson 2009 and Hilpinen 2004. For views more related to archaeology and studies in material culture, see Boivin 2008, Knappett 2005, or Hodder 2012. An interesting book on material culture is Broncano 2012. Obviously, the whole work by Ingold is of great importance to think about the matter/form dualism (See Ingold 2015 as his most recent views on the issue).

3 Classical references for the methodological commitment that ascribes agency to things are Appadurai (1988), Gell (1998), Knappett and Malafouris (2008)

4 I use the traditional term "idea" in a very loose way, as something that is conveyed through expressive acts, such as goal-directness, what the object is for, how actions are articulated together, etc.

5 Affordances have been understood as properties, dispositions, or relations, and though they are viewed as overcoming the objective/subjective dualism and as aspects of the environment relative to organisms, there is no consensus on how they are relative. For some discussions on these topics, see Turvey (1992), Reed (1996), Chemero (2003), and Heras-Escribano (2019).

6 Costall (2012) challenges this continuity that had been defended by Gibson (1979). I think that holding the continuity does not amount to the objectification of affordances as inherent properties of the artifacts themselves.

7 I do not agree on that characterization of the ontology of artifacts in terms of functions (intended or otherwise), but it is not essential to my point now.

8 The idea of affordances as demands and invitations to action is a point that has been emphasized by a certain tradition in the psychology of Gestalt and developed by Withagen *et al*. (2012).

9 For more details see Vega-Encabo and Muñoz 2019.

10 That is why the concept has been profusely used to characterize different hominin cultures in human evolution. See particularly the use of the concept by Gamble (1999) in his study about Paleolithic societies. Also interesting is the work by Tomlinson (2015).

11 See Ingold (1993) again for how an array of activities becomes an array of features. Nevertheless, I doubt that a single process of objectification of features and/or properties from a previous set of activities can be envisaged, as seems to assume Ingold.