

# Emoting the Situated Mind A Taxonomy of Affective Material Scaffolds

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**Abstract** Existing accounts of cognitive artefacts are a useful starting point for developing the emerging notion of situated affectivity. Starting from a recent taxonomy of cognitive artefacts, I propose a taxonomy of material affective scaffolds (material objects that we use to support, shape and more generally regulate our affective states). I distinguish representational material affective scaffolds (divided into iconic, indexical and symbolic ones) from nonrepresentational ones (psychoactive and sensory ones). I conclude by pointing out that the resulting taxonomy is based not only on properties of objects but also on the user's stance towards objects, which in turn depends on other contextual factors.

**Keywords** Affectivity. Emotion. Scaffolded Cognition. Cognitive Artefacts. Peirce. Representations. Symbols.

**Summary** 1 Introduction. – 2 Heersmink's Taxonomy of Cognitive Artefacts. – 3 Representational Affective Scaffolds. – 4 Nonrepresentational Affective Scaffolds. – 5 Why Taxonomize? – 6 Conclusions.



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## 1 Introduction

Much has been written in recent years about cognitive artefacts, defined as

physical objects made by humans for the purposes of aiding, enhancing, or improving cognition. (Hutchins 1999, 126)<sup>1</sup>

These include compasses, maps, calculators, clocks and many more. Cognitive artefacts are often said to ‘make us smarter’ because they enable us to solve problems we would otherwise not be able to solve (or only with much greater effort).

The notion of cognitive artefact has been used in philosophy of cognitive science to argue that cognition is not brain-bound but situated in the world. Cognitive artefacts can be characterized more generally as cognitive ‘scaffolds’: environmental supports with which we interact, and through which we enhance our planning and problem-solving skills (Sterelny 2010). Supporters of the so-called ‘extended-cognition thesis’ even regard some cognitive artefacts as constituting cognition (Clark, Chalmers 1998; Clark 2008; Menary 2010).

Comparatively less has been written on how artefacts help us have experiences we would otherwise not be able to have (or only with much difficulty) – such as emotional and, more generally affective, experiences.<sup>2</sup> This situation is changing rapidly, however. Over the last decade, various philosophers have started to argue that affective states, too, are environmentally situated.<sup>3</sup> In a recent paper, Piredda draws explicitly on the literature on cognitive artefacts to discuss ‘affective artefacts’, which she defines

tentatively [...] as objects that have the capacity to alter the affective condition of an agent, and that in some cases play an important role in defining that agent’s self. (Piredda 2019, 1)

Her discussion overlaps in part with Colombetti and Krueger’s (2015), who analyse how both material objects and people can function as ‘affective scaffolds’ in the context of activities of what they call ‘affective niche construction’.

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**1** See also Norman 1991; Kirsh 2010; Heersmink 2013; Casati 2018.

**2** I use the term ‘affective’ here to refer not only to emotions, but also moods and motivational drives such as pain, pleasure, fatigue and so on. For the difference between emotions and moods, see e.g. Stephan 2017.

**3** Griffiths, Scarantino 2009; Krueger 2014a, 2014b; Stephan, Walter, Wilutzky 2014; Colombetti, Krueger 2015; Colombetti, Roberts 2015; Roberts 2015; Colombetti 2016; Krueger, Szanto 2016; Piredda 2019; Candiotta, Piredda 2019; Saarinen 2020.

My aim in this paper is to add a further piece to this emerging literature by continuing to unpack and develop the view that we use material objects to scaffold our affective states. I prefer to talk of objects as affective ‘scaffolds’ rather than ‘artefacts’ because, even though the majority of affective scaffolds I discuss below are indeed artefacts (human-made objects), the notion of ‘scaffolds’ is broader and includes also naturally occurring objects. My aim, specifically, is to distinguish different types of ‘material’<sup>4</sup> affective scaffolds more systematically than done so far. This work is needed not only to catch up with the literature on cognitive scaffolds but also to further our understanding of how the human mind, in its experiential and affective dimension, is shaped and structured by the environment – an important step in continuing the ‘4E’ project of challenging the widespread view that the machinery of the mind is entirely or even primarily in the head.

In what follows I begin by presenting Heersmink’s (2013) taxonomy of cognitive artefacts (§ 2). Then I apply it to affective scaffolds, tweaking it along the way as I see fit. I distinguish representational and nonrepresentational affective scaffolds, dividing them into further taxa: iconic, indexical and symbolic scaffolds (§ 3), and psychoactive and sensory ones (§ 4), respectively. In section 5 I reflect on the resulting taxonomy, comparing it with Heersmink’s and clarifying how it should be interpreted as part of the broader project of analysing the phenomenon of affective scaffolding.

## 2 Heersmink’s Taxonomy of Cognitive Artefacts

Among existing discussions of cognitive artefacts is Heersmink’s (2013) taxonomy, which is influenced by Peirce’s theory of signs and Kirsh’s (1995) notion of ‘intelligent use of space’. Heersmink offers this taxonomy as

a first step towards a better understanding of the range and variety of cognitive artifacts (2013, 465)

and as a

point of departure, both for conceptualizing how different artifacts augment or impair cognitive performance and how they transform and are integrated into our cognitive system and practices. (2013, 465)

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<sup>4</sup> As in Colombetti, Krueger 2015, I use ‘material’ to denote objects rather than people. People are material too, of course, but it is not uncommon to use ‘material’ to refer specifically to objects – as in ‘material culture studies’.

He begins by distinguishing the two broad genera of ‘representational’ and ‘nonrepresentational’ cognitive artefacts. He notes that most existing accounts of cognitive artefacts characterize them primarily as representational – namely, as aiding cognition in virtue of referring to, or being about, something else (as in the case of maps and written text) (e.g. Norman 1991; Nersessian 2005; Casati 2018). Yet, he adds, cognitive artefacts can also be ‘nonrepresentational’ when they aid cognition without referring to anything else.

Heersmink further divides these two genera into ‘species’. Drawing broadly on Peirce’s semeiotic, he divides representational cognitive artefacts into ‘iconic’, ‘indexical’ and ‘symbolic’ ones. Iconic artefacts, he claims, represent in virtue of being highly isomorphic with what they refer to (as in the case of maps and knitting patterns). Indexical artefacts represent in virtue of having a direct causal connection with the objects they refer to (as in the case of the length of the mercury column of a thermometer, which represents temperature; or the direction of a flag, which represents the direction of the wind). Symbolic artefacts represent in virtue of “shared use, agreement, and logical rules” (Heersmink 2013, 474) (as in the case of written words or mathematical notations). Still following Peirce, Heersmink notes that most artefacts represent in more than one way at the same time. For example, a flag is also iconic, as there is an isomorphism between its direction and that of the wind. Nevertheless, Heersmink thinks it is useful to characterize token artefacts as ‘predominantly’ iconic, indexical or symbolic (see also Atkin 2008).<sup>5</sup>

Drawing mainly on Kirsh (1995), Heersmink then divides nonrepresentational cognitive artefacts into ‘spatial’ and ‘structural’ ones. Spatial artefacts aid cognition in virtue of their location in space. One uses space intelligently when, for example, one consistently places one’s car keys in the same place at home, so that one will know where they are without having to look for them each time; or when one places the article one intends to read next on top of a pile of other papers. Structural cognitive artefacts, on their part, aid cognition in virtue of their (concrete or virtual) structure – as when Scrabble players rearrange letter tiles to recall words more easily, or when Tetris players rotate virtual zooids to find the orientation that best

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**5** An early account of this tripartition can be found in Peirce (1867). Peirce’s theory of signs is notoriously difficult and complex, partly because for forty years he kept modifying it (Liszka 1996; Atkin 2013). As the aim of this section is to summarize Heersmink’s taxonomy, I won’t engage with the subtleties of Peirce’s semeiotic here, nor question Heersmink’s interpretation of Peirce. It is worth at least briefly stressing, however, that according to Peirce index, icon and symbol are not three separate entities but rather modalities of semeiotic functioning that are always present together in all kinds of signs. A taxonomy of objects rigidly based on separate semeiotic categories is thus arguably not in line with Peirce’s intentions (thanks to an anonymous reviewer for pointing this out).

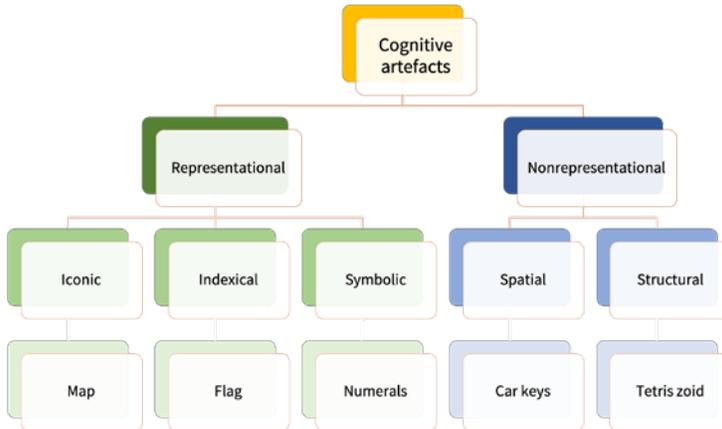


Figure 1 Heersmink's taxonomy of cognitive artefacts (adapted from Heersmink 2013, 473)

fits the socket at the bottom of the computer screen. The resulting taxonomy is summarised in figure 1.

### 3 Representational Affective Scaffolds

Whether what Heersmink calls 'spatial' and 'structural' cognitive artefacts are in fact nonrepresentational has been questioned (Fasoli 2018). As I discuss in the next section, in my view those two categories are indeed problematic and should be dropped. Accordingly, it may well be that cognitive artefacts, when defined as human-made tools with specific functions, are such mostly, or even only, because they represent something. For present purposes, however, we need not worry about this issue. What I want to draw attention to, instead, is that the representational vs. nonrepresentational distinction can be applied to affective material scaffolds, allowing us to say something important about them: namely, that whereas some objects influence our affective states (or, more succinctly, 'affect us' or just 'affect') because they refer to something else, others do so in virtue of their material properties as such. In this section I look in more detail at the first case, and in the next section at the second.

Heersmink's Peircean tripartition into iconic, indexical and symbolic cognitive artefacts can be applied to affective scaffolds. We can thus distinguish:

- iconic affective scaffolds, which affect in virtue of resembling something else;

- indexical affective scaffolds, which affect in virtue of being causally connected with something else;
- symbolic affective scaffolds, which affect in virtue of referring to something else by convention.

Good examples of iconic affective scaffolds are pictures or paintings of loved ones, and more generally of personally significant people, places or even objects. Sounds and music can also affect people iconically, for example when they imitate nature (e.g. streams, wind or bird songs). Of course, anything can resemble anything else along some dimension; there is indeed a complex debate on whether iconicity or resemblance is sufficient, or even necessary, for representation (e.g. Goldman 2003). As I clarify in section 5, my suggestion ultimately will be to interpret this classification as capturing how people interpret objects as part of affective scaffolding activities. From this user- (rather than object-) based perspective, what makes an object an iconic affective scaffold is that it affects one based on some resemblance that person perceives. Likewise, as I shall discuss, for indexical and symbolic affective scaffolds.

Indexical affective scaffolds include objects that affect one because they remind one of some past event, person or situation of which the object in question was a consequence. These objects correspond to what Heersmink, in a different paper, calls “autobiographical objects” (Heersmink 2018; see also Turkle 2007). Examples abound – from holiday souvenirs, to mementos of a first date or an adventurous trip, to objects that belonged to deceased loved ones, to music one used to listen to with someone or that was played by someone who affected one in some way. The experiences elicited by these objects can be nostalgia and longing for the past event, person or situation; or they can be re-enactments of past feelings (awe in front of a certain landscape, love and attraction for a certain person, and so on). Note that autobiographical objects may affect also in virtue of iconic features. For example, a magnet in the shape of the Eiffel Tower may affect me in virtue of its resemblance to the actual Eiffel Tower. Holiday souvenirs, however, typically affect because the person herself buys them when on holiday, i.e. because of a certain existential connection or “correspondence in fact” (one of Peirce’s characterization of indices; see Peirce 1867, 294; see also Atkin 2005). A magnet in the shape of the Eiffel Tower will not affect me in the same way if it is something I bought myself just after climbing up the Eiffel Tower (say), or if it is a gift from a friend and I have never even been in Paris (see also § 5).

Indexical affective scaffolds also include objects that affect us because they are given to us by someone as signs of gratitude or love. My grandmother used to knit scarves and sweaters for me, and to give them to me saying “This is for my dearest granddaughter with all my love”. Thus, those objects touch me because, as products of my grand-

mother's love for me, they remind me of such love. Thank-you cards and other gifts can work in the same way. They are the consequence, or expression, of feelings of gratitude; as such, they work as indexes of those feelings and can thus function as indexical affective scaffolds.

The class of symbolic affective scaffolds is particularly vast and complex. Innumerable objects affect us because they refer to something else by convention. A simple example is the wedding ring, which can strengthen one's feelings of connection with one's spouse as a symbol of commitment and faithfulness. More complex examples include objects employed in religious practices and various types of artworks (paintings, sculptures, music etc.). Religious practices make ample use of symbolic material objects for the purpose of affective transformation. There are innumerable examples: crosses, golden and silver objects, incense, labyrinths, candles, relics and more. The characterization of religious symbols as affective scaffolds fits well with Geertz's (1973) definition of religion as a system of symbols (including material objects) aimed at "[establishing] powerful, pervasive, and long-lasting moods and motivations" (Geertz 1973, 90). Geertz importantly emphasizes the ritualistic-performative dimension of religion, attributing a double role to it. On the one hand, it is during rituals that religious symbols acquire their specific meanings, and/or that those meanings are reinforced. On the other hand, rituals are means through which meanings become psychologically inscribed or internalized, determining long-term dispositions to feel and behave in certain ways. As Geertz writes, the "concrete symbols" of a religion

[induce] in the worshipper a certain distinctive set of dispositions (tendencies, capacities, propensities, skills, habits, liabilities, pronenesses) which lend a chronic character to the flow of his activity and the quality of his experience. (1973, 95)

For Geertz, religious symbols are in fact tools that enable, and even instruct, people how to feel – and, importantly, how to feel 'specifically'. Through its distinctive symbols, each religion gives specific direction, order and form to what would otherwise be chaotic or uncanny experiences.

As one concrete example out of many possible ones, let us consider the Easter Vigil service in the Roman Catholic tradition. This service takes place in the hours of darkness before Easter Sunday. It begins outside the church, where the congregation gathers around a fire. The priest blesses the fire and uses it to light the Paschal candle, into which he also inscribes a cross and other symbols. At this stage he speaks the words: "May the light of Christ rising in glory

dispel the darkness of our hearts and minds”.<sup>6</sup> A deacon then carries the candle into the church through the central nave, in darkness, followed by a procession of people holding unlit candles. Once in the church he raises up the Paschal candle three times while singing “The light of Christ”. As he proceeds, those attending the service gradually light their candles from the Paschal candle. As the latter is finally placed in the middle of the sanctuary, the lights of the church are switched on. This part of the service is followed by the singing of the Proclamation, which includes explicit references to darkness and light; for example:

This is the night that with a pillar of fire banished the darkness of sin [...] This is the night, when Christ broke the prison-bars of death and rose victorious from the underworld [...] Christ your Son, who, coming back from death’s domain, has shed his peaceful light on humanity, and lives and reigns for ever and ever.

During this service, the words spoken by the priest indicate that light produced by fire symbolizes Christ and his power to dispel sin and death, in turn symbolized by darkness. The service can thus be seen as a performance intended to communicate the idea that Christ has the power to redeem humanity without weakening (just as the fire from the Paschal candle can illuminate the small individual candles without dimming) and that through his resurrection humanity is saved (light spreads and defeats darkness). It is clear that the service aims to induce an affective transformation in the participants. It is theatrical, and uses darkness and light not just to represent and convey the concept of salvation through Christ’s resurrection but also to touch and move the congregation. Over the course of the service, attendees are meant to experience the uplifting power of light as it overcomes darkness. They move from the gloomy and lonely atmosphere of unlit spaces, where they cannot see or interact with other participants, to the welcoming and uplifting atmosphere of the fully lit church, and a renewed sense of togetherness. The sensory qualities of darkness and light clearly play an important role in facilitating this affective transformation (see § 4). Yet knowledge of their symbolic meaning, explicated and underscored by the words uttered by the priest during the service, further enhances their affective power.

When it comes to art, some objects are more deliberately symbolic than others. European paintings from various historical periods are loaded with symbols that influence how the perceiver interprets the painting and, relatedly, how the painting affects the perceiver. This is also why knowing the symbolic meaning of objects portrayed

<sup>6</sup> For the description of the service I followed Catholic Truth Society 2012, 311-21.



Figure 2 Osias Beert. *Still Life with Cherries in China Bowls*. 1608

in this type of art can add greatly to the perceiver's experience. Consider for example the painting *Still Life with Cherries in China Bowls* by the Flemish artist Osias Beert (1580-1624) [fig. 2].

This work depicts various objects on a table, including a bread roll, an oil lamp, a dragonfly, a knife, a bowl of strawberries and one of cherries. A naïve viewer who looks at this painting without awareness of its symbolic meanings will probably be affected primarily by its light, colours and shapes. When I first saw this painting as such a naïve viewer, I was attracted in particular by the vivid red of the fruit and the realistic qualities of the bread, especially by comparison with the gloomy darkness of the background. I only briefly noted the insect and knife in the foreground, and thought they were there mainly just to enhance the realism of the scene. I then read that the cherries and strawberries are meant to represent the souls of human beings, and the dragonfly the devil waiting to corrupt them (Pound 2018). This information significantly changed my affective response to the painting. Now, when I watch it, I see the previously seemingly insignificant dragonfly as ominous. Its stillness and apparently accidental presence creates an affective tension as I imaginatively anticipate it starting to lift and fly threateningly over the fruits. The redness of the fruit is not attractive or pleasing anymore. Rather, it bears disturbing associations with guilt and existential suffering (and even blood), making me think of the damned souls in the burning red flames of Dante's *Inferno*. Awareness of the symbolic meanings of the painting has thus considerably changed its impact on my affective experience.

Much more could be said, of course, about the affective impact of symbols in art – not just in painting but also sculpture, music, theatre, and so on. And there are other domains where symbols are

explicitly created and used to influence our affective states, such as branding and advertising. Yet hopefully these few examples are enough to illustrate the general point that objects can be symbolic affective scaffolds.

#### **4 Nonrepresentational Affective Scaffolds**

It is clear that many objects also affect without referring to anything else, and can thus be characterized as ‘nonrepresentational’ affective scaffolds. How can we analyse these further? Heersmink’s (2013) taxonomy, in this case, does not seem useful. Arguably, this is because his distinction between spatial and structural cognitive artefacts is problematic to begin with. First, structure, after all, exists in space. When we say that objects have a certain structure we refer to how their parts are organized in space. When we rearrange Scrabble tiles to facilitate word retrieval, we rearrange those tiles in space. Indeed, in Kirsh’s (1995) paper (from which Heersmink draws), the examples of rearranging Scrabble tiles and of leaving the car keys in the same spot are both meant to illustrate the same phenomenon – the intelligent use of space. Second, it does not seem appropriate either to talk of ‘spatial cognitive artefacts’. What Kirsh originally emphasized is that, more often than we may think, we arrange and move objects in space to simplify our planning and problem-solving tasks. In order to capture this phenomenon, it seems more accurate to talk, for example, of the ‘use in space’ we sometimes make of objects to solve problems (rather than to categorize objects in some contexts as ‘spatial cognitive artefacts’).

Given that this part of Heersmink’s taxonomy is problematic, I propose to drop it and to divide nonrepresentational affective scaffolds instead into ‘psychoactive’ and ‘sensory’ ones. By ‘psychoactive scaffolds’ I refer to items that users introduce in their body because of their global effects on consciousness (such as changes in mood, or increased alertness or relaxation). By ‘sensory scaffolds’ I refer to objects that affect users in virtue of sensory qualities and accompanying hedonic tone.

Prototypical psychoactive affective scaffolds are psychoactive (or ‘psychotropic’) substances, called this way because they induce altered states of consciousness. Many of us regularly introduce into our organism a variety of these substances (from caffeine to nicotine and alcohol, to antidepressants, anxiolytics, and illegal drugs) to be more or less alert, relaxed, optimistic, joyful, euphoric, and so on. Humans have consumed these substances since prehistoric times, and today we know that their consciousness-altering function depends on the specific action of a variety of neurotransmitters (e.g. dopamine, serotonin, norepinephrine) at synaptic level. These substances influence

our affective state without referring to anything else (although they can, and often are, incorporated into practices which attribute e.g. symbolic meanings to them; see below). Importantly, I understand the class of psychoactive affective scaffolds broadly, to include objects containing substances that are not standardly defined in physiology as 'psychoactive', but that also lead to alterations in consciousness (especially in mood and energy level) when inserted into the organism. Foods containing simple carbs (sugars, refined grains etc.) are good examples. Eating these foods leads to an experience of increased energy (due to a rapid increase in glucose). More generally, our motivational drives often depend on the organism's need to maintain homeostasis; hence we drink when thirsty, eat when hungry etc. The substances we take in response to these drives can affect us (e.g. by giving a sense of satisfaction and restoring good mood) and as such fall into the category of psychoactive affective scaffolds.

Sensory affective scaffolds include all sorts of objects that influence our affective states through their sensory qualities – colours, pitches, tastes, scents, textures, and so on. Sensory qualities are experienced through the senses.<sup>7</sup> The most obvious way in which they affect us is through their hedonic character – their felt pleasantness or unpleasantness. Why and how we find some sensory qualities pleasant or unpleasant is a complex empirical question (e.g. Miskovic, Anderson 2018). Staying at the phenomenological level, it seems that when we find sensory qualities pleasant or unpleasant, we experience their hedonic character 'together with' the sensory quality itself (e.g. we experience a certain scent 'as' pleasant). This is most evident in the case of scents and tastes, but arguably also applies to colours, sounds etc. Given that hedonic tone is typically regarded as a dimension of mood (e.g. Russell 2003), pleasantness/unpleasantness is likely to influence mood (see Herz 2009, for instance, for evidence that scents experienced as pleasant/unpleasant improve/worsen mood). Generally speaking, seeing pleasant sights, tasting pleasant tastes, smelling pleasant scents, and so on, will increase a person's overall 'positive affect' and thus incline her toward a more positive mood (feeling good, happy, uplifted, content); vice versa for unpleasant hedonic tone. In addition, arguably sensory qualities can also affect in more specific ways (which will often depend on the type of object involved): they can, in various degrees and combinations, stimulate, energize, uplift, relax, bore, arouse, surprise, comfort, please, annoy, fascinate, absorb, attract, repel, disgust, seduce, and

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<sup>7</sup> For convenience, in this paper I follow ordinary language here and say that we experience, or perceive, colours, sounds, tastes etc. I do not, however, endorse the objectivist view that sensory qualities exist independently of the perceiver. My preferred view is that sensory qualities are 'enacted' in the encounter of the perceiver and the perceived (Varela, Thompson, Rosch 1991; Thompson 1995).

so on. Overall, it seems correct to say that objects can affect us non-representationally in virtue of their sensory properties *qua* sensory properties (namely, without the user taking the sensory properties to refer to or indicate something else) – as when my mood is lifted by smelling a rose or a freshly baked loaf of bread, or when I am seduced by a luminous shade of dark cobalt blue in the sky, just before darkness. As such, these objects are best characterized as nonrepresentational affective scaffolds.

Importantly, because we typically experience objects through more than one sense at once, objects may affect us in different ways at the same time, generating quite complex sensory-related affective states. Pizza, for example, has a certain scent and taste but also colour, texture and even sound (compare the sound of a crisp thin Roman-style pizza with that of a gooey thick Chicago-style one). Each of these properties individually considered can affect. Yet, when one eats pizza, these sensory properties are combined together, generating a complex affective experience. This point applies to eating any other food, of course, and generalizes to other activities and their combinations. Every moment of consciousness arguably usually involves a multisensory experience. As I type these words I feel the keys under my fingers, hear the noise the keys make when pressed, and see the rest of the screen and its background.<sup>8</sup>

One may want to question the distinction between psychoactive and sensory affective scaffolds by pointing out that some senses – taste and smell – are characterized as ‘chemical senses’. Unlike sight and hearing, taste and smell involve contact between chemical molecules in the environment and (chemo)receptors in the tongue and nasal cavity.<sup>9</sup> In fact, touch is also in part a chemical sense, as it can involve the chemical activation of nerve endings in soft tissue (chemesthesis), giving rise to sensations of stinging, tingling, cooling and burning (Smith 2015). It may thus seem that the distinction between sensory and psychoactive affective scaffolds does not hold because scents, flavours and psychoactive scaffolds all affect one in virtue of processes involving chemical substances and chemoreception.

I do not think this consideration undermines the distinction. Conceptually and experientially, there is a clear difference between perceiving sensory qualities through exteroception (a process which, in

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<sup>8</sup> I am considering here only sensory stimuli that are consciously perceived. However, we can also be affected by sensory stimuli that are only subliminally perceived. For example there is evidence that our affective state is influenced by odorants that are not consciously perceived (Sela, Sobel 2010). This may be due to the nature of the odorant, learnt associations and/or the psychoactive properties of some odorants (see below, main text).

<sup>9</sup> For an accessible introduction to sensory physiology, see Widmaier, Raff, Strang 2014, ch. 7.

the case of smell and taste, happens to involve chemoreception rather than e.g. photoreception) and undergoing alterations in consciousness due to the insertion into the organism of substances that alter neurotransmission in the brain, but are not sensed. In fact, the distinction is also valid at the physiological level: chemoreception is involved in both cases, but in the case of taste and smell the processes that define those senses as 'chemical' occur in the sensory organs, whereas in the case of psychotropic drugs they occur in the brain.

To clarify the difference further, consider coffee. Coffee possesses chemical components that stimulate bitter taste receptors (primarily located on the tongue). This process is mainly responsible for the sensed bitterness of coffee. Among the components of coffee is caffeine, which apparently contributes only minimally to bitterness, yet acts on the central nervous system as a psychoactive substance (it binds with adenosine receptors in the brain, blocking the absorption of adenosine - an inhibitory neurotransmitter which reduces heart rate and promotes sleep) (Poole, Tordoff 2017). When one drinks coffee to feel less sleepy and improve concentration, it is the psychoactive properties of caffeine that one exploits, and coffee thus functions as a psychoactive affective scaffold. When, on the other hand, one drinks coffee because one likes its taste, then coffee functions as a sensory affective scaffold.<sup>10</sup>

Thus it is not that the distinction between psychoactive and sensory affective scaffolds does not hold, but rather that certain items can function both as sensory and psychoactive affective scaffolds. Incense is another example. Smelling incense involves the detection of chemical molecules through chemoreceptors in the nose. When this scent is experienced as pleasant and used to create a pleasant environment, we can say that the incense functions as a sensory affective scaffold: it is its scent, as sensed and liked, that affects. However, incense also contains molecules that make it into a psychoactive substance. In a study on mice, Moussaieff et al. (2008) showed that incensole acetate (a component of incense) has anxiolytic and antidepressant effects, and suggested that this is why incense is used widely across cultures in religious rituals. If this is right, incense also works as a psychoactive affective scaffold.

**10** How one comes to enjoy the bitterness of coffee is a difficult question (Poole, Tordoff 2017). Given that bitterness is usually disliked (it typically is in children and most animal species) because it is associated with toxic substances, one possibility is that it is the uplifting effect of caffeine that, by association and anticipation, makes one like and seek coffee. Even so, however, I would still say that the bitterness of coffee, when enjoyed, is best regarded as a sensory affective scaffold - because it is the 'sensed bitterness' that is enjoyed (note also that whereas the sensation of bitterness is immediate, the pick-up induced by caffeine takes longer to kick in - from 10 to 45 minutes). Analogous considerations apply to the following example of incense, in the main text.

A more interesting complication is that psychoactive and sensory scaffolds are often integrated into practices that associate them with cultural meanings, and thereby also count as representational affective scaffolds. Coffee is again a good example, and wine an even better one. One may drink wine because of its pleasant sensory qualities and/or its psychoactive effects (in which case wine works as a nonrepresentational affective scaffold). But the drinker may also be a connoisseur who associates the wine with a specific vintage and *terroir*. These elements will add further layers to the affective experience accompanying wine drinking. Wine in the case of the connoisseur is not just a nonrepresentational psychoactive scaffold, but also a representational one (mainly an indexical one).

More complex examples are entheogen substances (psychoactive substances used for spiritual goals) used in collective rituals – such as the *ayahuasca* ritual performed by people in the Amazon (Labate, Cavnar 2014). These substances are attributed symbolic meanings that add up to their affective scaffolding power. In the case of the *peyote* cactus that grows in Central America, its primary psychoactive ingredient is mescaline, and the most commonly reported effects of its ingestion are visual and auditory hallucinations, feelings of contentment, wellbeing and calmness, and muscle relaxation. These effects make the cactus into a nonrepresentational affective scaffold. However, the *peyote* also has various cultural symbolic meanings. Users generally believe that it allows them to communicate directly with a spiritual realm of existence (Issitt, Main 2014). Many Native Americans regard the cactus as a medicine with God-given properties, and as an omniscient and compassionate personality or spirit. It is also called ‘Mother Peyote’ or ‘Father Peyote’, and is associated with symbols of origin, dawn and birth (Calabrese 1994). These associations make the *peyote* into (also) a representational affective scaffold.<sup>11</sup>

## 5 Why Taxonomize?

Having gone through the exercise of applying Heersmink’s approach to affective scaffolds, I now want to pause to reflect on what has been achieved. *Prima facie*, what we now have is a taxonomy of material affective scaffolds (fig. 3) that broadly mirrors the one of cognitive artefacts presented in section 2.

Importantly, however, I regard this taxonomy differently from how Heersmink’s regards his. He explicitly presents his approach as “ar-

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<sup>11</sup> More could be said about this topic, especially about how one arguably needs to learn to use psychoactive substances in social-ritual contexts to be affected in the desired way (Becker 1953).

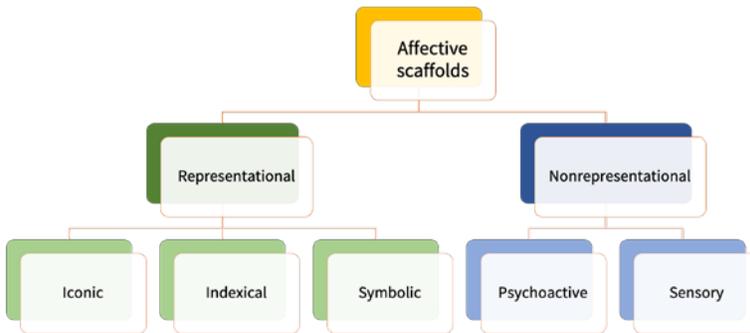


Figure 3 A taxonomy of affective scaffolds

tifact-centered” (2013, 472) to offset the prevailing anthropocentrism of others’ categorizations. As he writes:

I take as my point of departure the specific properties of cognitive artifacts and then categorize them on the basis of those properties, not on the properties or goals of the agents that design, make, or use them. (Heersmink 2013, 472)

His taxonomy arguably captures salient features of objects that may explain why they are typically used the way they are. Yet entirely to bracket the user and her goals seems to me problematic, especially if the aim is not just to analyse objects *per se* but objects that are used in mind-altering or mind-supporting activities. Affective scaffolding, as characterized by Colombetti and Krueger (2015), is indeed such an activity: it is a form of affective regulation that involves not just processes of ‘internal’ cognitive reorganization (distraction, re-appraisal, evaluation of coping potential; Gross 2015) but also object-involving activities (see also Krueger 2014a). As I see it, the main distinction between representational and nonrepresentational items is useful precisely because it captures the important general fact that, in the context of such activities, the user may or may not take an ‘interpretive stance’ towards objects. When she does, we can characterize the item as a representational scaffold; when she does not, as a nonrepresentational scaffold. The user’s stance in the context of a specific affective scaffolding activity thus contributes to determining the object’s position in the taxonomy.

Thus, iconic, indexical and symbolic scaffolds are such because of how the user interprets them. When a person uses an object to influence her affective state because of some similarity she perceives between that object and something else, that object is (for her) an iconic affective scaffold. In my view, this is why the notion of an iconic

affective scaffold is useful in the first place: it explains why the user relates to an object (for the purposes of affective regulation) in the way she does – that is, it is a category for phenomenological description and psychological explanation. Likewise, I take the notion of an indexical affective scaffold to refer to an object that a person uses because she sees a certain causal connection between that object and something else. Likewise, too, for symbolic affective scaffolds, which I regard as such because of some arbitrary connection the user perceives or establishes between them and something else.

Of course, the user can be wrong or idiosyncratic in her interpretation of the object. She could be mistaken in seeing, say, a causal connection where in fact there is none. For example, she might value her scarf because she thinks it was knitted by her beloved grandmother when in fact, unbeknownst to her, it was not (say the scarf has no connection at all to her grandmother). The scarf, in other words, is not an index of her grandmother. Still, for the purposes of phenomenological description and psychological explanation, it is useful to say that, for the person, the object functions as an indexical affective scaffold. This notion captures how the person sees/feels the object, and relatedly why she values it and uses it to regulate her affect. Similarly, if a person values an object and uses it to regulate her affective state on the basis of a resemblance only she perceives between the object and something else, again the suggestion here is that the object counts as an iconic affective scaffold (even though, it might be argued, it is not an icon). Likewise for symbolic affective scaffolds.<sup>12</sup>

On the nonrepresentational side of the taxonomy, properties of objects are more relevant in determining what kind of affective scaffold an object is. Psychoactive and sensory scaffolds can affect just in virtue of their physical properties, without the user taking an interpretive stance. Of course, the user needs to be sensitive to those objects for them to affect her (colour is not calming for a blind person; coffee is not a pick up for someone not sensitive to the psychoactive effects of caffeine), and this sensitivity may in turn vary with context and even with the user's goals and intentions. Nevertheless, the main point is that, in order to affect, nonrepresentational scaffolds need not be interpreted by the user as referring to something else.

Overall, then, what place in the taxonomy an object occupies will depend on whether or not the user interprets it; and if so, how. The wedding ring, for example, will function as a symbolic affective scaffold.

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**12** It may be asked whether some affective responses or some affective uses of objects are more appropriate than others. What counts as an 'appropriate' or 'inappropriate' affective response or use is an orthogonal issue (and a complex one) that I do not intend to address here. My aim here is just to describe a widespread psychological phenomenon – namely, that people can interpret objects in different ways and that these different interpretations often determine different affective responses to those objects.

fold when it is interpreted according to convention as referring to a commitment to faithfulness. The same user could, however, relate to the wedding ring in a different way - perhaps as a memento of when the ring was put on her finger during the wedding ceremony. In this case the ring will function as an indexical affective scaffold (and, importantly, in virtue of this different interpretation it could elicit different affective states). Or, the same wedding ring could affect the user in virtue of its sensory qualities (e.g. shininess, heaviness) without being taken to refer to anything else - in which case it will function as a nonrepresentational sensory affective scaffold. In fact, I often wear my wedding ring because of the physical comfort I get from feeling something around my finger - a comfort I get from wearing rings more generally. Or consider pizza again. I like to make pizza every Sunday night during the damp and dark winter months, to cheer me up. This activity brings me joy and comfort through its multisensoriality - the changing and intensifying scent as the pizza bakes, and all the many other sensory pleasures that accompany eating pizza. The pizza is also a psychoactive scaffold in virtue of its high carb content. Additionally, making pizza is for me a way of retaining a sense of identity. I have been making pizza on Sunday nights since I was a university student, and I have fond memories associated with conviviality when I make and eat it. My pizza thus also functions as an indexical affective scaffold. Similarly, a cigarette functions not only as a psychoactive affective scaffold (although it probably always does in smokers, unless it contains no nicotine); smokers often say they enjoy various sensory aspects of smoking (such as holding the cigarette in their hand and mouth). In the context of ritual, the *peyote* works as a psychoactive and symbolic affective scaffold. A picture of one's parents can be an iconic but also an indexical and sensory affective scaffold. And so on. In sum, token objects do not fall under just one taxon [fig. 4].

Importantly, some uses of objects as affective scaffolds will be determined primarily by sociocultural norms and expectations, while others by personal history. In Western cultures, to interpret a wedding ring as a symbol of commitment to faithfulness is in line with sociocultural expectations. In fact, the wedding ceremony is arguably structured precisely to 'inscribe' such meaning into the rings - with the rings being exchanged just after the pronouncement of the vows. Alongside these socioculturally mediated interpretations, however, there can be a range of other, more idiosyncratic interpretations. In my particular case, my wedding ring also often makes me giggle, as it reminds me of a joke my husband made on our wedding day about our rings.

A related implication of this understanding of the taxonomy is that what type of affective scaffold an object is will also depend on individual differences among users. In spite of some commonalities (e.g. most if not all humans like sugar, salt and fat), we generally develop

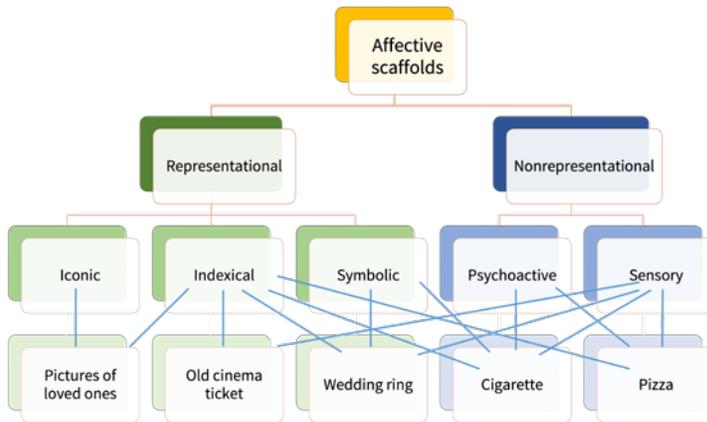


Figure 4 The same object can function as a different type of affective scaffold

personal preferences for certain sensory stimuli and activities, and have different aims, concerns, personalities and so on. The same object will thus function as a different type of affective scaffold for different people, and even function as a scaffold for one person but not for another. People have different tastes when it comes to home décor, for example (some are minimalists, others maximalists); some find sacred music uplifting, others boring; some like to wear small rings, some big ones, some many ones, and others fewer or none; some find ironing relaxing, others loathe it, and so on.

Finally, individual differences in training and personal history will also determine how people relate to objects. Of course, only some people learn to use certain objects for affective regulatory purposes (as in the case of musical instruments). Less obviously, how people relate to objects also depends on whether and how they pay attention to objects and to how objects affect them. Our sensitivity to things is not unalterable. Appreciation can be trained and cultivated, and not just for ‘highbrow’ art and objects such as fine wines. We know from mindfulness practices that we can change our stance toward everyday objects and activities, and thereby change how these affect us (e.g. Bays 2009). How much training one has in these practices will then influence how one is affected by objects. Likewise for cultural norms, that also determine how people relate to and are affected by objects. In Japan, for example, the cultural centrality of the aesthetic quality of *wabi* (impermanence and imperfection) will influence how people relate to, look at and appreciate certain objects.

To come full circle, what about Heersmink’s taxonomy of cognitive artefacts? Is it appropriate to regard it as ‘artefact-based’? This

question requires a longer elaboration than I have room for here. Briefly, it seems to me that a taxonomy of cognitive artefacts cannot entirely bracket the user (see also Fasoli 2018). For an artefact to be cognitive in the first place it means that it is used to aid some cognitive/epistemic process, which will depend on the user's goals, skill, level of cognitive development, and so on. Thus, if the ultimate aim of taxonomizing artefacts is to explain how they aid cognition, then it seems that more attention will need to be paid to the user too, in various respects.

## 6 Conclusions

This paper has proposed a taxonomy of affective scaffolds, starting from Heersmink's (2013) taxonomy of cognitive artefacts. This exercise has produced various insights that I hope are valuable for further developing the emerging situated approach to affectivity. The original taxonomy had to be tweaked a bit, and may be so again. Yet along the way we are gaining more detailed conceptual resources for spelling out why we surround ourselves with objects, and why and how we use them and develop practices and activities including them. The present analysis has highlighted that objects are complex things which can affect us in many different ways in virtue of their material properties as well as of what we take them to refer to. Importantly, objects can have such different effects on us because we are complex historical and enculturated bodily beings with the capacity not only to be directly affected by objects as material things, but also to associate these objects with something beyond themselves.

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