

RUNNING HEAD: LOVING OBJECTS: CAN AUTISM EXPLAIN OBJECTOPHILIA?

Loving objects: can autism explain objectophilia?

Dimitria Electra Gatzia¹ and Sarah Arnaud²

¹The University of Akron, Akron, Ohio, US

² Corresponding author, Graduate Center, City University of New York, 365 5th Avenue, 10016 New York, NY, US, sarnaud@gc.cuny.edu

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ABSTRACT

Objectophilia (also known as Objectum-Sexuality) is a sexual orientation involving an emotional, romantic or sexual attraction to specific objects. By comparison to the three most commonly discussed categories of sexual orientations, viz. heterosexuality, homosexuality, and bisexuality (involving attraction to humans of the opposite sex, the same sex, or both sexes respectively), the determinants of objectophilia are poorly understood. Since sexual orientation is largely driven by biology, the aim of this paper is to examine the determining factors of objectophilia. We examine four hypotheses (pertaining to fetishism, synesthesia, cross-modal mental imagery, and autism) and argue that the most likely determining factors of objectophilia are the social and non-social features of autism. Future studies could enhance our understanding of objectophilia and potentially lessen its marginalization.

Keywords: objectophilia; sexual orientation; synesthesia; autism; ASD; cross-modal mental imagery

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INTRODUCTION

Objectophilia (also known as Objectum-Sexuality) is a sexual orientation involving an enduring emotional, romantic or sexual attraction to specific objects such as trains, bridges, walls, cars, and words (Terry, 2010). Erika Eiffel (2009), who identifies herself as an objectophile, describes it as “an orientation just as hetero and homo sexuality are orientations of one’s innate sexuality.” Objectophilia gained the first media attention in 1979, when Eija-Riitta Eklöf, a model-builder, married the Berlin Wall (Terry, 2010; Marsh, 2010). In 2006, Erika Eiffel held a similar commitment ceremony with the Eiffel Tower, which was prominently featured in the media. Erika describes her reasons for holding the commitment ceremony as follows:

“When I ‘married’ the monumental structure, it was simply to honor my love for Bridges as La Tour Eiffel was dubbed the “Shepherdess of the Bridges” and engineered by one of the world’s greatest Bridge engineers, Gustave Eiffel. Changing my surname was a measure to illustrate my love for Bridges and a commitment to what I am; an objectum-sexual.”¹

Erika writes that she found herself drawn to late 19 and early 20 century bridges since she was a child. She remembers being heartbroken at the age of 15 when her favorite Fairbanks bridge collapsed and recounts her experience as follows: “the pain that consumed me was taken as a foolish obsession so I buried my broken heart as the sands of the river buried the remains of my Fairbanks Bridge.”²

Although these ceremonies, spanning almost three decades, brought some media attention to objectophilia, research on it is currently at its infancy. This is, in part, because objectophilia

¹ <http://objectum-sexuality.org/expressions-eiffel.pdf>, last accessed 2019-06-09

² <http://objectum-sexuality.org/expressions-eiffel.pdf>, last accessed 2019-06-09

has not yet been formally recognized as a sexual orientation not only within the social and political spheres but also within the sciences (e.g., psychology or biology). Indeed, as in Erika's case, the emotional, romantic, and sexual connections objectophiles develop with their objects is often discounted as a "foolish obsession." As a result, the determinants of objectophilia are poorly understood.

The aim of this paper is to examine the determining factors of objectophilia. We consider four hypotheses pertaining to fetishism, synesthesia, cross-modal mental imagery, and autism, and argue that the most likely determining factors of objectophilia are the social and non-social features of autism. Autism is a heterogeneous spectrum, encompassing different types, degrees, and manifestations. The social and non-social features of autism are generally grouped into two main clusters by clinical classification systems: difficulties in social communication and social interactions and restricted or repetitive behaviors and interests (APA, 2013). Future studies on the relation between objectophilia and autism could enhance our understanding of objectophilia and potentially lessen its marginalization.

1. HYPOTHESIS 1: IS OBJECTOPHILIA A TYPE OF FETISH?

Although we described objectophilia as a sexual orientation, it may nevertheless be tempting to treat it as a fetish. However, there are at least two crucial differences between objectophilia and fetishism.

First, fetishism centers on the use of objects as a source of sexual satisfaction or the fulfillment of sexual fantasies or urges (Darcangelo, 2008; see also Bhugra & De Silva, 1996; Rachman, 1966). There are two types of object fetishisms: form and media. In form fetishism, what is important is the form of an object (Darcangelo, 2008; Rachman, 1966). For example, a

high-heeled shoe fetish is often related to the form of the shoe, its shape. In media fetishism, it is the material of an object that is important. For example, a leather fetishism is often related to the material the leather, its smell or its texture.

Fetishists use objects exclusively as the means of achieving sexual gratification. The focus is exclusively on the fetish, not on the object itself, and the sexual gratification tends to be associated with the feeling of power over the object. As a result, the sexual acts involved in fetishism are characteristically depersonalized and objectified (Darcangelo, 2008; Bhugra & De Silva, 1996; Rachman, 1966).

Objectophiles too can experience sexual gratification when they think or interact with their object-partners, and even mere representation of them such as models or pictures of them. However, while the focus is on the object and its qualities, the object is not seen exclusively as a source of either sexual gratification or fulfillment of sexual fantasy. As a result, the attraction to objects objectophiles experience is not purely sexual, depersonalized, objectified, or derived from feeling a sense of power over the object. One objectophile describes the sexual attraction to object-partners as follows:

...just because we state that we have 'sex' with an object does not mean that the way we have sex is anything like the way that humans have sex. For instance, an OS [objectum sexual] woman does not necessarily have to be penetrated to be having sex; a lot of OS sex is based on an emotional intimacy. Now, don't get me wrong. There are those that are very physically sexual with their objects, but for me personally, it is a psychic connection, an energy transfer in addition to kissing, cuddling, and other such 'above-the-waist' displays of affection that defines what I mean when I say that my partners and I have sex. (<http://www.objectum-sexuality.org>)

Unlike fetishists, objectophiles do not use objects exclusively as the means of achieving sexual gratification. They develop deep emotional connections to objects and describe them as amorous partners (Terry, 2010).

Secondly, while fetishism is associated with parts of the body (such as feet, breasts, amputated limbs) or objects that can be worn (such as gloves, leather, or spandex), objectophilia is not associated with any of these. Objectophiles form emotional, romantic or sexual relation with specific objects similar to the relations humans form with their partners. Indeed, fetishism tends to be visual and more prevalent among males, presumably because males tend to be more sexually sensitive to visual stimuli than females (Darcangelo, 2008). Objectophilia, by contrast, is not more prevalent among males. These differences between objectophilia and fetishism suggest that these are two distinct phenomena.

2. HYPOTHESIS 2: IS OBJECTOPHILIA LINKED TO SYNESTHESIA?

The second hypothesis we will now consider is whether objectophilia is linked to synesthesia. The term “synesthesia” is an umbrella term that encompasses a spectrum of a relatively rare neurologically-based conditions in which the stimulation of one sensory or cognitive pathway (called the inducer) elicits atypical automatic, involuntary, and consistent experiences in the same or another sensory or cognitive pathway (called the concurrent) (see e.g. Cytowic, 1989/2002; Baron-Cohen & Harrison, 1997; Day, 2005; Cytowic & Eagleman, 2009; Banissy & Ward, 2007; Smilek et al., 2007). For example, to a synesthete, graphemes, sounds, or tastes could automatically trigger color experiences, tastes, or smells.³ These inducer-concurrent

³ Sean Day lists as many as 80 different types of synesthesia (see <http://www.daysyn.com/types-of-syn.html>). Many of these different types of synesthesia are subsumed in the five categories discussed by Cytowic and Eagleman (2009).

pairs are idiosyncratic (i.e., they differ from one synesthete to another), highly specific (but may or may not be perceptual in nature), automatic (i.e., they cannot be turned on or off at will), consistent over time (and tend to be present in early childhood), and are thought to have a genetic component (Asher et al., 2009). For example, to a grapheme-color synesthesia the experience of the letter A could automatically induce an experience of the color red.

Synesthesia is typically classified as either projector or associator (Dixon, et al., 2004, (Rich & Mattingley, 2014))⁴. While both of these types of synesthesia describe inducer-concurrent pairs, the distinction is used to highlight the way the concurrent is experienced. For projector synesthetes, concurrents are experienced as projected outward, which has led some researchers to claim that the former is a perceptual phenomenon, as opposed to a merely cognitive one (Ramachandran & Hubbard, 2003; although see Brogaard, 2014). For associator synesthetes, concurrents are experienced internally (in the “mind’s eye” as it were) in the way imaginative episodes are experienced (Brogaard, 2014).

Three types of theoretical frameworks have been proposed to characterize the relation between synesthesia and other borderline perceptual and conceptual phenomena: monism, dualism, and pluralism (Marks, 2011; Marks & Mulvenna, 2013). For synesthetic monists, phenomenal experience plays a central role in characterizing the relation between synesthesia and other borderline perceptual and conceptual phenomena. They claim that synesthesia is best construed as a spectrum or continuum, with strong, proper, or genuine synesthesias residing at the high end of the continuum, and weak (cognitive or pseudo) synesthesias residing at the low end. Both synesthetic dualists and pluralists rely on mechanism-based distinctions to classify the

⁴ A distinction between ‘strong’ and ‘weak’ synesthesia has also been made (see Martino and Marks, 2001; Day, 2016). However, this classification is seen as problematic because weak, cognitive, or pseudo synesthesia includes cross-modal phenomena lacking conscious concurrents, a core feature of synaesthesia (see Spence, 2011; Deroy and Spence, 2013).

various types of synesthesias and posit that synesthesia involves distinct underlying mechanisms and different genetic components (Novich, Cheng, & Eagleman, 2011; although see Marks & Mulvenna, 2013). Synesthetic dualists posit a simple dichotomy between synesthesias, which include projector and associator, and non-synesthesias, which include cross-modal correspondence or imagery, or hallucinations (Deroy & Spence, 2013). Synesthetic pluralists also distinguish between synesthetic experiences and non-synesthetic experiences but posit that synesthesia is a broad category that contains an assortment of distinct sub-categories that lack shared traits but are linked in terms of resemblance to one another (Marks and Mulvenna, 2013).

One known type of synesthesia is object-personification synesthesia, which involves objects eliciting personality traits. For example, a car may elicit experiences associated with femininity or a soft glove may elicit experiences of kindness. Of course, the ascription of human attributes to objects (e.g., pets, cars, plants, etc.) is not uncommon among neurotypicals. For example, neurotypicals often attribute female characteristics to their cars. We can easily imagine someone describing their Porsche Macan as a beautiful lady. However, object-personification synesthesia differs from this more common form of anthropomorphizing (Heider & Simmel, 1944; Waytz et al., 2019). Unlike the act of anthropomorphizing, object-personification synesthesia involves vivid, automatic, or consistent inducer-concurrent pairs (Asher et al., 2009; Smilek et al., 2007). To use the above example, to an object-personification synesthete, a Porsche Macan could automatically elicit experiences of vivid personality traits, such as shyness or honesty, that remain consistent over time. Grapheme-personification synesthesia is a type of object-personification synesthesia where the inducers are numbers or letters. A well-documented case involves a grapheme-personification synesthete, T.E., who experiences numbers as having

vivid and complex personalities (Smilek et al., 2007: 981). Here's how T.E. describes numbers and their relations to each other:

[The number] Three is male; definitely male. Three is such a jerk! He only thinks of himself. He does not care about any other numbers or anything. All he wants is to better himself and he'll use any sneaky, underhanded means necessary. But he's also pretty young; he doesn't understand anything and he doesn't have very much power, as far as social status is concerned. So, he tries to hang out with Eight (who's also a bad number) just so that he can feel better about himself. But really, none of the numbers can stand him. He's a real jerk. He'll pretend as though he's your friend, but then he'll manipulate you and stab you in the back if he feels he can gain something from it. Then he'll never speak to you again. If Three had parents, even his parents would hate him. It's not as though what he does has some purpose or something behind it, he's just a really nasty number. He just wants things for himself. He doesn't care in what he does. If he had a voice, it wouldn't be high-pitched, but it wouldn't be deep. It'd be on the high side, a very annoying voice. He'd be short and very thin; very annoying.

While all grapheme-personification synesthetes attribute personalities as well as emotions or motives to graphemes, few have such vivid, complex synesthetic experiences as T.E.'s (Sobczak-Edmans & Sagiv, 2013).

Given the phenomenological similarities between objectophilia and object-personification synesthesia, it has been suggested that object-sexuality may be linked to object-personification synesthesia (Marsh, 2010). A recent study, which tested 34 self-identified objectophiles against 88 controls, indicates such a link between objectophilia and object-personification synesthesia (Simner et al., 2019). Objectophiles in this study were asked to

describe their object-partners from a list of 44 personality adjectives (e.g., outgoing, conscientious, artistic). Controls were given the same list but asked to “invent personifications for their “most-loved or favourite object” via the everyday mechanisms of anthropomorphism.” Both groups were given a surprise retest, 30 minutes after taking the initial test. The retest was administered in order to determine the consistency of the participants’ responses over time. The results indicated that objectophiles were more likely to use the same adjectives from the list to describe their object-partners ($M = 69.5\%$, $SD = 18.5\%$) than the controls ($M = 49.4\%$, $SD = 24.8\%$). The authors argue that these results cannot be attributed to objectophiles having a heightened ability to remember personality traits because the objectophiles in the group “were no more consistent than controls when attributing personalities to letters or numbers”, which was “revealed by a lack of group differences in prevalence for personality ratings during the grapheme-personification test” (Simner et al., 2019). They, thus, conclude that objectophiles “tend to have genuine object-personification synaesthesia.”

Although a 20% mean difference between the group of objectophiles (69.5%) and the controls (49.4%) is indeed significant, it is somewhat surprising that it was not greater given the intimate connections objectophiles share with their object-partners. Perhaps, what accounts for these findings is that when objectophiles describe their object-partners they don’t tend to use personality adjectives (e.g., outgoing, conscientious, artistic). Rather, they describe their object-partners as having distinct, although not necessarily human, attributes. For example, Eva K. and Rudi, both self-ascribed objectophiles, describe their object-partners (respectively) as follows:

My dearly loved words, names, or phrases have a soul, an essence; I even dare to say they have a persona. They have colours, landscapes, or wordscape as I like to say.

Atmospheres... Words, names or phrases are intangible and abstract subjects so of course

we can't think in terms of love-making between humans. However it is possible for me to love them through the making of graphic creations. I usually design my own artworks with the words, sentences, or names I love (<http://www.objectum-sexuality.org>), and

...through my life-time I have learned that an object has got a soul. I was mourning the loss of an object for very long and my life was senseless, joyless. Soon it was pretty clear for me, that something that had no soul could not scratch such a big hole into my soul with its loss. When something touches your body, it must have a body too. When something touches your soul, it must have a soul (<http://www.objectum-sexuality.org>)

Contrary to T.E., who uses personality adjectives to describe the synesthetic personalities of numbers, e.g., three is an uncaring, selfish male, Eva describes her “dearly loved words, names, or phrases” as having a “persona” as well as “colours, landscapes, or wordscapes.” Similarly, Rudi describes his object-partners as having souls, as opposed to personality traits, which he believes, explains why their loss can make one's life feel senseless and joyless.

Given that consistency of inducer-concurrent pairs is a distinguishing feature of synesthesia, Simner and her colleagues (2019) hypothesized that if objectophilia is linked to one type of synesthesia (i.e., object-personification synesthesia), then it is likely that it will also be linked to another. This is because multiple types of synesthesia tend to co-occur within the same individual. On the basis of this reasoning, they tested the two groups (objectophiles and controls) for grapheme-personification (because it shows phenomenological similarities with object personification) and grapheme-color synesthesia (because it is the most widely tested and well-understood variant of synesthesia). The results indicated elevated rates of both grapheme-personification synesthesia (for genders only) and grapheme-color synesthesia among

objectophiles. If objectophilia is linked to these three types of synesthesia (object-personification, grapheme-personification, and grapheme-color), it is likely that it may be linked to other types. Two additional types of synesthesia seem to merit investigation: sexual-synesthesia and mirror-synesthesia.

Sexual-synesthesia is identified by inducer-concurrent pairs where the inducer is typically a sexual activity such as touching, kissing, or intercourse, and the concurrent is a synesthetic experience (such as a color, flavor, smell, sound, or temperature). For example, kissing may trigger a synesthetic experience of a certain color or sound (Cytowic, 1989). Typically, the experiences of objectophiles are similar to the experiences most people have towards their loved ones or their pets. These experiences differ from the experiences of sexual synesthetes in that only the latter involve inducer-concurrent pairs. In other words, objectophiles do not generally describe their experience of touching an object-partner as eliciting a color, smell, flavor, and so forth.

Moreover, there is anecdotal evidence that objectophiles tend to experience enhanced sexual satisfaction even when they think of or see their object-partners, or even a representation of them (e.g., a photograph or a model of their object-partner). Sexual-synesthetes, by contrast, do not experience enhanced sexual satisfaction in such circumstances (Nielsen et al., 2013). Although there are crucial differences between objectophiles and sexual-synesthetes, if objectophilia is linked to one type of synesthesia, as the aforementioned study seems to indicate, then it stands to reason that it may also be linked to another. The question of whether sexual-synesthesia is linked to objectophilia, therefore, merits investigation.

Another type of synesthesia that merits investigation is mirror-synesthesia. Functional imaging suggests the existence of mirror systems in humans for sensations, emotions, and

actions (Gallese et al., 1996; Buccino et al., 2001; Blakemore et al., 2005; Wicker et al., 2003; Banissy & Ward, 2007). For example, observing an agent grasping or manipulating an object triggers mirror neurons. A somatotopically-organized activation during observation of object-related actions was found in the posterior parietal lobe, suggesting that when individuals observe an action, an internal representation of that action is automatically generated in their premotor cortex (Buccino et al., 2001). The mirror-neuron system (comprising premotor cortex, superior temporal sulcus, and parietal cortex) forms a system for matching observation and execution of motor actions (Gallese et al., 1996; Buccino et al., 2001). It has been suggested that one possible function of the mirror-neuron system is to enable organisms to detect certain mental states of observed conspecifics, which may be a part of a more general mind-reading ability (Gallese & Goldman, 1998).

Mirror-synesthesia is described as a type of synesthesia in which visual perception of tactile sensations or emotions elicits conscious tactile or emotional experiences in the observer (Gallese & Goldman, 1998; Blakemore et al., 2005). For example, the observation of another person being touched can be experienced as a tactile stimulation on the equivalent part of one's own body. Or observing an emotion such as disgust or pain can elicit the same emotional response (Wicker et al., 2003; Banissy & Ward, 2007). Mirror-synesthesia has been attributed to the overactivity (meaning, above the threshold for conscious tactile perception) of the mirror-neuron system (Blakemore et al., 2005).

There are currently no studies on whether objectophiles experience elevated levels of mirror synesthete. Research does suggest that an object alone is insufficient to activate the mirror-neuron system. Its activation requires an *interaction* between the act of manipulating or grasping and the object of that act (Gallese et al., 1996). However, what we know about

objectophiles thus far indicates that emotional, romantic or sexual responses can be elicited not only when objectophiles interact with their object-partners but also when they see them or mere representations of them, and even when they imagine them or think of them. While the elicitation of such responses does not require an active or overactive mirror-neuron system, it is nevertheless possible that objectophilia may be linked to mirror-synesthesia.

If mirror-synesthesia results from the overactivity of the mirror-neuron system, then it could be the case that the mirror-neuron system becomes overactive when the inducer (e.g., a visual perception of a tactile sensation) elicits a concurrent (e.g., a tactile experience in the observer), even if it remains inactive or underactive during the typical interactions objectophiles have with their object-partners. Future research is needed to determine what types of synesthesias, if any, are linked to objectophilia.

3. HYPOTHESIS 3: OBJECTOPHILIA AND CROSS-MODAL MENTAL IMAGERY

In the previous section we discussed current evidence, which although limited, seem to indicate a link between objectophilia and synesthesia. The aim in this section is to suggest that there may be room for skepticism regarding these results. Recall that the experiment discussed in the previous section was designed to establish consistency of inducer-concurrent pairs by first administering a test and then administering a surprise retest (Simner et al., 2019). In the case of object-personification synesthesia, Simner and colleagues (2019) hypothesized that consistency over time would be established if objectophiles chose the same personality adjectives to describe their object-partners they had chosen 30 minutes earlier (during the initial test). Let us grant, for the sake of argument, that the findings pertaining to consistency over time cannot be attributed to the fact that objectophiles were better memorizers than the controls. Is that a sufficient basis for

concluding, as they do, that the results show that objectophiles “tend to have genuine object-personification synaesthesia, as well as elevated rates of both grapheme-personification synaesthesia (for genders only) and grapheme-colour synaesthesia”? In what follows we outline some concerns pertaining to the methodology of the study, which indicate that this inference may have been too hasty.

One obvious methodological challenge for the study involves the duration between the initial test and the surprise retest. Specifically, a thirty minutes time lapse between the initial test and the surprise retest seems to be an insufficient length of time to readily establish consistency of inducer-concurrent pairs among objectophiles. By way of comparison, in TE’s case, the initial test and the surprise retest were administered 12 weeks apart (see Smilek et al., 2007). As we noted in the previous section, the fact that the mean average difference between the objectophiles and the controls was merely 20% is perplexing given the intimate relations objectophiles have with their object-partners. Recall that the controls were asked to *invent* a personality for their favorite or loved object. Given the lack of intimate connections between the controls and their loved objects, coupled with the fact that controls were asked to invent a personality for their loved objects just before the initial test, it is indeed surprising that they performed nearly as well as the objectophiles.

It would be interesting to compare the results of this study to the results of a (future) study measuring differences in performance between two groups of non-objectophiles. One group, consisting of single participants, could be asked to invent a personality for their imaginary spouse or partner prior to administering the same test and surprise retest within a 30 minute duration. During testing, the single participants could then be asked to choose the personality adjectives from the same list that best describe the invented personality of their imaginary spouse

or partner and then compare them to the choices they make 30 minutes later (during the surprise retest). The other group, consisting of participants who have a spouse or partner, could be asked to choose the same personality adjectives to describe their spouse or partner and to compare them to the choices they make 30 minutes later (during the surprise retest). If the differences in performance between the single and the partnered groups were found to be similar to the differences found between the objectophiles and the controls by Simner and colleagues (2019), there would be room for skepticism about the authors claim that the results show that objectophiles tend to have genuine forms of synaesthesia. For, such similarities in performance would not reveal consistency of inducer-concurrent pairs (which is a distinguishing feature of synesthesia) but rather consistency of the personality traits we attribute to our loved ones over time (which is not a distinguishing feature of synesthesia).

It is not difficult to be consistent in one's choices (especially in the presence of a visual aid such as the list of 44 personality adjectives) when one shares an intimate connection with either a human-partner or an object-partner, and doing so in such a short duration only increases the ease of the task. Indeed, the latter alternative – that the results may only reveal consistency of the personality traits we attribute to our loved ones over time, as opposed to inducer-concurrent pairs (characteristic of synesthetic experiences) seems more likely when considering the fact that synesthesia bears some similarities to another prevalent phenomenon, viz. cross-modal mental imagery.

Cross-modal mental imagery occurs when a physical (or imagined) presentation of a stimulus in one sensory modality elicits a mental image in another modality such as a sound

inducing a tactile mental image (Spence & Deroy, 2013a; Kitagawa and Igarashi, 2005)⁵. Unlike synesthesia (which involves automatic or consistent inducer-concurrent pairings), cross-modal mental imagery involves cross-modal correspondence, which is prevalent among non-synesthetes (Spence, 2011). For example, although music-color synesthetes see brighter colors when they hear high-pitched notes (Mulvenna and Walsh, 2005), non-synesthetes exhibit consistent cross-modal correspondences between high-pitched sounds and small, bright objects located high up in space (Spence, 2011; Deroy and Spence, 2013a).⁶ And although there are similarities between synesthesia and cross-modal mental imagery (e.g., both are considered to involve conscious, vivid concurrents in the absence of the appropriate sensory input), only the former is characterized by regular inducer-concurrent pairs (Deroy & Spence, 2013a).

The resemblance between synesthesia and cross-modal imagery suggests an alternative, and perhaps more plausible, interpretation of the experimental results from the study from Simner and colleagues (2019). Namely, it is likely objectophiles performed better than the controls because they experience higher rates of cross-modal mental imagery, which is far more prevalent among neurotypicals than synesthesia. Future experiments could test for both

⁵ Deroy and Spence (2013a) use the term ‘multisensory’ to refer to cases in which one imagines having, say, a conversation with one’s best friend. This example involves stimuli in two different modalities, i.e., auditory and visual, which are combined in the representation of a single event.

⁶ Brogaard (2014) identifies three different kinds of conscious states of seeing denoted by the English verb ‘to see’: *visual experiences*, *introspective seeming states*, and *visual seeming states*. Visual experiences are veridical and stand in a non-deviant causal relation to the state of affairs represented by them while visual and seeming states are neither strictly veridical nor experiential but are more common. Introspective seemings introduce a hyperintensional context. For example, substituting ‘superman’ with ‘Clark Kent’ fails to preserve its truth-value of Lois Lane’s utterance: “This drug is really strong! I see superman all over the place” made under the influence of a strong hallucinatory drug. Synesthetic experience, according to Brogaard, is a kind of visual seeming since it involves the cognitive processing of a stimulus, e.g., a number, prior to experiencing it as having a synesthetic color. For example, some synesthetes experience different synesthetic colors in ambiguous contexts such as when a grapheme could be interpreted either as a number or a letter (Cytowic & Eagleman 2009). The term ‘see’ here refers to this last conscious state, a visual seeming state.

synesthesia and cross-modal mental imagery in order to determine whether there is a link between objectophilia and either one or both of these phenomena.

4. HYPOTHESIS 4: OBJECTOPHILIA CAN BE EXPLAINED BY AUTISM

4.1. Autism as one of the components of objectophilia

As we noted already, Simner and her colleagues (2019) argue that their results indicate that there is a link between objectophilia and synesthesia. They further speculate that object-personification synesthesia may be a determinant of objectophilia: synesthesia “might increase the anthropomorphic qualities of inanimate objects which could facilitate the development of intimate and romantic feelings over time.” (Simner et al., 2019: 6). However, synesthesia does not seem to readily explain the deep connections objectophiles develop with their object-partners. Recall that grapheme-personalization synesthetes like T.E. attribute personal traits to objects (i.e., three is a male, mean, selfish, etc.) but do not develop deep emotional, romantic or sexual connections towards the inducers of their synesthetic experiences (e.g., the graphemes).

Moreover, unlike grapheme-personalization synesthetes, objectophiles like Eva and Rudi describe their object-partners using non-anthropocentric terms such as colors, landscapes, and as having souls. Another objectophile, D. (from Berlin Germany), writes “I love my darling for exactly what he is, for all his features, his soul and his character which is so different from a human’s. There is something so special and sublime about him which a human could never have. A human could never replace him.”⁷ These reports suggest that it is not the tendency to attribute anthropocentric traits in objects that is the determining factor of objectophilia. Indeed, the

⁷ <http://objectum-sexuality.org>, Expressions, Thoughts from Me...an OS Person – by D. from Berlin, last accessed 2019-06-09

purported link between objectophilia and synesthesia fails to explain the deep emotional, romantic or sexual connections objectophiles develop with their object-partners.

Moreover, since these connections resemble the emotional, romantic or sexual connections individuals of varying sexual orientations develop with other individuals more than they resemble the relation between synesthetes and the inducers of their experiences, the determining factors of objectophilia still need to be ascertained. So even if future research were to establish a firm connection between objectophilia and synesthesia, an explanation for the deep emotional, romantic or sexual attraction objectophiles develop towards specific objects should still be provided.

In what follows, we argue that the most likely determinant of objectophilia is Autism Spectrum Disorder (ASD), a neurodevelopmental condition affecting 1.5 % of the population (Lyll et al., 2017) and characterized by two broad dimensions of manifestations: particularities in social and communication behaviors, and restricted and repetitive activities and interests (APA, 2013). Our hypothesis is consistent with empirical evidence showing that objectophiles have significantly higher autistic traits compared to controls in every Autism Spectrum Quotient factor (Baron-Cohen, 2001), and especially in the social skills factor (Simner et al., 2019).

A significant difference was also found among objectophiles as compared to controls, with 13 out of 34 objectophiles having an official diagnosis of autism but none of the 88 controls (Simner et al., 2019). These results are consistent with a survey of twenty-one objectophiles, which was contacted almost a decade earlier, that indicated that six of them had a diagnosis of autism, four were identified as such (without having received an official diagnosis), and three

had been said to have autistic traits (Marsh, 2010).⁸ The documentary “Off the Rails” also features an objectophile, Darius, who is in love with trains and has been diagnosed with Asperger (Irving, 2016).

Now that significant quantitative correlations have been identified between objectophilia and autism, suggesting a causal pathway from the latter to the former (Simner et al., 2019), we shall provide the qualitative precisions on the manifestations of objectophilia that are present in the two broad dimensions of autistic traits, most of which are specific to autism.

Although the determining factors of objectophilia may include synesthesia or cross-modal mental imagination, we argue that autistic traits found in both dimensions of the description of ASD provide a better explanation for the particular relationships objectophiles develop towards objects than synesthetic inducer-concurrent pairs. Therefore, our analysis focuses on the autistic traits that could contribute to the development of objectophilia. If it is correct, objectophiles could be diagnosed on the autism spectrum.

It is important to note that we do not suggest that autistic individuals are necessarily objectophiles. As with the other forms of sexual orientation, other biological, social, and environmental factors as well as individuals’ narratives, preferences, or personality traits may be determining factors of objectophilia. The explanation of the different manifestations of objectophilia may be found at different levels of explanation and may require interdisciplinary research. In addition, it is likely that not all objectophiles will meet the criteria for ASD at the present time. Autism is a highly heterogeneous condition and research on autism could motivate a fractionation of the spectrum, leading to the discovery of different independent subgroups

⁸ It remains possible that all of the objectophiles in the study (Simner et al., 2019) and the survey (Marsh, 2010) are actually autistic but not diagnosed or not self-diagnosed, depending on the method used to assess the correlation.

(Brunsdon & Happé, 2014; Happé & Ronald, 2008; Hervas, 2016). It is therefore plausible that objectophiles will meet the diagnostic criteria of a particular type of autism that has not yet been specified.

In what follows, we discuss the specific traits of autism that may relate to the development of objectophilia. We start by pointing out the similarities of social particularities in both objectophilia and autism, and show that the overwhelming aspect of the surrounding world and the lack of social salience that are found in autism are also present in objectophilia. We then point to similarities in non-social particularities which reveal that the core characteristics of objectophilia are also found in autism. These comparisons show important similarities in the phenotypes of autistic individuals and objectophiles, suggesting autism (as a neurodevelopmental condition) as a determining factor of objectophilia. For both social and non-social features, we consider one of the recent explanations that has been proposed for these manifestations in autism in terms of predictive coding. We consider it to be a promising avenue to understand the underlying mechanisms of the development of objectophilia.

4.2. Particularities with social interactions

The first dimension of manifestations in autism concerns social communication and social and emotional interactions (APA, 2013). Autistic individuals have difficulties in developing social relationships and in maintaining them when they are present, and a diminished interest or motivation in sharing with others (APA, 2013; Chevallier et al., 2012; Kohls et al., 2012). This avoidance of the social world is manifested by an overwhelming aspect and a non-salient aspect. We consider both in turn.

4.2.1. The social world is overwhelming

The world can be particularly overwhelming for autistic people (Gomot & Wicker, 2012; Markram, et al., 2007). Not only stimuli in their surrounding environment, but also sensations from their own body are characterized by this displeasing intensity (DuBois et al., 2016; Garfinkel et al., 2016; Quattrocki & Friston, 2014). Autism is characterized by a “hyper-emotionality” (Markram et al. 2007) and a “hyper-perception,” as described by Gomot and Wicker (2012) who report evidence of “enhanced perceptual function such as visual hyperacuity (Ashwin et al., 2009), hyperacusis (Khalifa et al., 2004) and acute tactile sensitivity (Blakemore et al., 2006)” (p.241). At its physical realization, these traits could be linked to the hyper-functioning of elementary brain modules (known as local neural microcircuits), which are characterized by hyper-reactivity and hyper-plasticity (Markram & Markram, 2010).

For autistic individuals, understanding others requires expending a great deal of time and energy, as numerous studies have shown (Livingston et al., 2019; Schuwerk et al., 2016). Feeling overwhelmed by the consideration of all the potential social cues when trying to understand others can lead one to avoid others. Avoidance of social interactions is one of the possible mechanisms that autistic people use to grapple with the effects of hyper-perception.

One of the difficulties with reciprocal relationships in autism concerns sharing imaginative play (APA, 2013). As a component of sexual relationships between adults, imaginative play is linked to the exploration of desire and pleasure (Paasonen, 2018). Its absence could therefore partly explain the lack of interest in sexual relationships that is sometimes found in autism (Gilmour et al., 2012): without its shared playful aspect, the sexual relationships would be deprived of their pleasurable components, and experienced as insipid or negative.

Particularities in imaginative play could also underly the important variations in sexual identity that are found in autism compared to neurotypicality (George & Stokes, 2018).

Finally, the hyper-tactile sensitivity that characterizes autism could also contribute to the avoidance of social interactions at the romantic and sexual levels. Such hypersensitivity could reinforce the overwhelming aspect of social life and give it a higher level of complexity. That is, in fact how autistic individuals such as Temple Grandin (1984: 151) recount their experiences: “As a child I wanted to feel the comfort of being held, but then I would shrink away for fear of losing control and being engulfed when people hugged me.” If being held is a source of such negative feelings in autism, sexual relationships could be a source of an even greater discomfort for some of them.

Collectively, this evidence suggests that the overwhelming sensations that characterize autism give rise to a need to withdraw from social interactions and diminish the desire to form intimate relationships with other human beings. In some cases, all romantic and sexual interactions will be apprehended as too complex or potentially hurtful and consequently be avoided. As the testimonies of objectophiles evince, a core trait of objectophilia involves the same desire to refrain from forming social relationships with other humans. The privation of social interactions can subsequently lead to the inability to form emotional, romantic, or sexual relationships with other humans, which is characteristic among objectophiles.

Most of the objectophiles surveyed by Marsh (2010) reported that they had no romantic or sexual relationships with other humans and expressed no desire to do so. Only two reported having a sexual relationship with another human. One objectophile reported not having sexual feelings for objects, but described the intensity of her emotional connection with her object-partner as surpassing her sexual attraction for humans. De Silva and Pernet (1992) describe a

patient, George, who feels sexual attraction to Austin Metro cars, as shy, lacking social skills, having few friends and no social life.⁹ Another objectophile describes her lack of interest in romantic interactions as follows: “For me romantic relations with humans are just out of the question. I have never felt any sexual/physical or erotic magnetism to people.”¹⁰ Motschenbacher (2014: 60) also describes a case of another objectophile, Steffen, and his relationship with rubber plants:

Steffen confirms that he is not interested in all-human romantic relationships and indicates that he does not view this as a problem but rather as an advantage compared to relationships with persons, who, as is implied, are more likely to disappoint him.

Of course, the lack of interest for social interactions and romantic or sexual relationships with humans is not a necessary feature of either autism or of objectophilia. If these are any prevalent features in both objectophilia and autism, they should not be reduced to such traits.

We now consider the lack of salience for social and emotional cues that characterizes autism from early childhood, and the impact on such traits in the development of objectophilia, notably their impact on their romantic and sexual relationships.

4.2.2. The social world is not salient

In addition to being overwhelming, the social world lacks its salience for individuals with autism. What makes the social world so automatically apprehended for neurotypicals is an innate preference for social and emotional cues. These cues are detected through abilities developed in

⁹ De Silva and Pernet (1992) treat this as a case of paraphilia akin to fetishism but report that George showed limited interest in women. They also report that George said that the front of the car resembled a smiling face and that he sought sexual gratification by masturbating either in the car or, preferably, behind the car while the engine was running. These descriptions coupled with the rest of the characteristics of George’s personality indicate that this case is more akin to objectophilia than fetishism.

¹⁰ <http://objectum-sexuality.org/expressions-evak-1.pdf>

early childhood such as the capacity to direct one's gaze toward social stimuli and to detect other people's gaze prior to other types of stimuli (Frazier et al., 2017). These abilities give to neurotypicals a special interest in other people, as opposed to objects, and stimuli of their surrounding environment. Unlike neurotypicals, autistic individuals do not display any early preference for social stimuli (Lloyd-Fox et al., 2013; Sasson & Touchstone, 2014). The attention of autistic individuals is not primarily directed toward social cues (Sasson & Touchstone, 2014). In addition, alterations in gaze direction and detection are common among autistic individuals (see Frazier et al., 2017, for a meta-analysis). This difference between autistic individuals and neurotypicals is present as early as 4 to 6 months of age (Lloyd-Fox et al., 2013), and remains present during adult life: while neurotypical adults are particularly interested in social-emotional stimuli, autistic adults show an equal interest for social-emotional and non-social stimuli (Silani et al., 2008). The absence of salience for social and emotional cues can trigger a withdrawal from social interactions early in life as human interactions are sometimes too complex and too intense to be enjoyable to autistic individuals. It can further lead to a lack of interest for social interactions as well as romantic or sexual relationships with humans.

Objectophiles share the same early diminished interest for social interactions as autistic individuals. As one objectophile women reports (Marsh, 2010): "I tried in early days to be open-minded to human sex because of pressure from society, it always failed prior to sex." Furthermore, both the lack of interest in romantic or sexual relationships with humans and the affinity for objects occur at an early age. Erika Eiffel reports finding bridges very attractive from a very young age¹¹ while Eija-Riitta Berliner-Mauer reports falling in love with the Berlin Wall upon seeing it on television at the young age of seven (Marsh, 2010).

¹¹ See <http://objectum-sexuality.org/expressions-eiffel.pdf>

4.2.3. An explanation in terms of predictive coding

In order to confirm the hypothesis that autism is a determinant of objectophilia, the mechanisms underlying these manifestations will have to be discovered and compared. Several explanations of these social particularities in autism have been proposed. However, all of them are highly contested, including the idea of a central deficit of theory of mind in autism (Baron-Cohen et al., 1985; for criticism see Iao & Leekam, 2014) and the hypothesis of an extreme male brain theory of autism (Baron-Cohen, 2010), which seems to carry problematic assumptions and notably stereotypical biased ideas about gender (Fine, 2010; Ridley, 2019). Given the heterogeneity of autism (Müller & Amaral, 2017), it is not likely that a single, unifying mechanism will be able to explain the distinct particularities of autism.¹² Recent studies on predictive coding suggest that particularities in these processes in autism underly the social particularities discussed above.

According to predictive processing theories, rather than reacting to some inputs of the environment, the brain is constantly making inferences about these inputs to determine their causes, which are simply the components of one's environments (Clark, 2013, 2016; Hohwy 2013; Pezzulo & Cisek 2016). All processed information is constantly updated on the basis of cerebral predictions allowing one to evaluate the probability of some hypothesis. Researchers have recently proposed that autistic individuals have difficulties related to predictive coding, which can explain difficulties in interacting with others (Palmer et al., 2015; Von Der Lühe et al., 2016). Accordingly, the social difficulties autistic individuals encounter result from a higher degree of difficulty in processing mental states compared to other kinds of information: because mental states are hidden, that is, they are not explicitly displayed states, the stimuli they trigger

¹² A similar pluralistic approach might also be needed to explain the mechanisms underlying objectophilia.

require highly complex inferences in order to be interpreted. For example, happiness can be manifested by more subtle behaviors that make it harder to recognize than obvious joyful reactions.

Autistic individuals seem to have a less spontaneous predictive coding, which prevent them from making implicit inferences as fast as their neurotypical counterparts. As a result, social cues appear even more complex, unpredictable, and ambiguous than they would have been with a more spontaneous predictive coding. In other words, the ability to socially interact with others is compromised in autism because it is a complex process that requires prediction about hidden inputs. This is demonstrated through masking-detection tasks, which are used to test visual discrimination of an agent's action in autistic and control participants (Von Der Lühе et al., 2016).

When the agent's action is a response to another agent's communicative gesture, the visual discrimination is enhanced for the control group but not for the autistic group. This suggests difficulties in using social information to predict people's actions, which are related to particularities in predictive coding. Recent studies show that both hypersensitivity and hyperresponsivity to the social world in autism result from particularities in predictive coding (Van de Cruys et al., 2019). Given that objectophiles seem to have similar overwhelming sensations of a not-salient social world, if such particularities were also observed in objectophilia, it would offer a robust justification to our hypothesis. In order to test this empirically, the experimental procedure that are used in these studies on autism could also be used with objectophiles.

4.3. A preference for non-social features of the world

While the descriptions and definitions of autism have drastically changed over time, one common feature that has remained constant since Leo Kanner first defined autism in 1943 is the attachment autistic individuals have to objects. According to Kanner, one of the core features of autistic children is their “fascination for objects.” Today, the DSM 5 still describes a “strong attachment to or preoccupation with unusual objects” as an example of the restricted and fixated interests that characterize autism (APA, 2013).

This attachment to objects found in certain cases of autism¹³ can be explained by the heightened interest in the non-social world among autistic individuals compared to neurotypicals, linked to both predictability and facilitated access through perceptual abilities associated with recognition and detection. We are now considering these two aspects.

4.3.1. The non-social world is predictable

The preference to interact with objects or direct one’s interests on some non-human features that characterize autism could be what leads to the development of love and hate relationships with objects among some autistic individuals. Inclinations to interact with things can be correlated with different types of feelings such as curiosity, love, jealousy, and hate. So not only positive but also negative affective components can come from interactions with things. Both peculiar positive and negative feelings for inanimate objects have been observed in autism.

¹³ That does not mean that autistic individuals like objects and dislike people, or care exclusively about the former and not the latter. What seems to happen in autism is an enhanced interest to interact with objects compared to neurotypicals, which, in some cases, can trigger in some cases a preference for relationships with objects rather than humans. In other cases, autistic individuals will not develop any attraction for objects.

Kanner's (1943: 218) description of Donald, one of the autistic children he observed, illustrated this strong rejection for certain objects:

[Donald has a] dislike for self-propelling vehicles, such as Taylor-tots, tricycles, and swings. He is still fearful of tricycles and seems to have almost a horror of them when he is forced to ride, at which time he will try to hold onto the person assisting him.

Kanner (1943: 222-223) also reported a mother's description of another autistic child, Frederick W.'s: "He is afraid of mechanical things; he runs from them. He used to be afraid of my eggbeater, is perfectly petrified of my vacuum cleaner. Elevators are simply a terrifying experience to him. He is afraid of spinning tops."

The interest in objects could be related to their predictability, which may explain why autistic individuals seem to experience fewer radical changes in their feelings for both humans and objects than neurotypicals. Researchers from the Autism Research Center in Cambridge report that "[c]hildren with autism tend to love vehicles, probably because they are not alive and don't move unpredictably. What they seem to dislike are objects that move when they least expect them to, and for no apparent reason". (Users Guide, *The Transporters* 2006: 4-5, quoted in Richardson, 2018: 57). Temple Grandin (1995: 91) also finds the unpredictable behavior of humans puzzling: "I don't understand how a person can love someone one minute and then want to kill him in a jealous rage the next." What is predictable tends to remain constant. Constancy eliminates the element of surprise that could otherwise lead to radical changes in one's valence of feelings.

Similar responses are observed in objectophilia. The development of love and hate for objects is also present among objectophiles. An objectophile man who is in love and entertains relationships with fisheye buttons, explains (Marsh, 2010):

I have something of an aversion to buttons generally. I detest shirt buttons. There is something of a love/hate balance for me between the type that I love and the other types which I am uncomfortable with.

Moreover, objectophiles strongly prefer relationships to objects rather than people (Marsh, 2010; Motschenbacher, 2014; Terry, 2010). It is possible that objects seem specifically attractive to objectophiles because of their predictability. Similarly to autism, this trait could explain why the relationships objectophiles form with their object-partners are generally long-lasting as well as why, compared to fetishists, “objectophiles claim to have a much more intimate and spiritual relationship with their objects, which they consider to be their lovers or (often permanent) sexual partners” (Motschenbacher, 2014: 55). For example, Adam M. reports feeling emotionally and spiritually close to his 1997 Saturn SW1 Station Wagon, Nina: “We’re so close emotionally and spiritually that I honestly consider her my wife...that vehicle is as much of a vessel for a soul as my body is a vessel for mine.” In what follows, we propose that a second reason for the interest in non-social features of the world comes from its facilitated access through enhanced perceptual abilities.¹⁴

4.3.2. The non-social world is perceived with details and a high accuracy

Visual perception is more accurate for local information than global information in autism compared to neurotypicality, leading to difficulties in generalizing information and better abilities in noticing details (Bogdashina, 2016; Frith & Happé, 1994; Jones, 2003; Mottron et al., 2006; Van der Hallen et al., 2015). The underlying mechanisms of these manifestations pertain to the way objects are visually recognized. Autistic individuals access the fine-grained visual

¹⁴ <http://objectum-sexuality.org/expressions-am.pdf>

information faster and more automatically than neurotypicals, whose visual recognition of fine-grained information is mediated by prior perception of global information (Caplette et al., 2016). In other words, compared to neurotypicals, when autistic individuals perceive an object, they process its details more immediately than its global appearance. Such visual perceptions are very demanding, but they also result in increased accuracy in terms of recognition.

If this particularity in visual perception tends to foster the desire to avoid the social world (because of its complexity), it is likely that it also contributes to the preference toward predictable objects, which can be recognized with greater accuracy. The facilitated access to the non-social world coupled with the enhanced interest for it could then contribute to the development of affective feelings for some objects.

This facilitated access to the non-social world over the social one is not only achieved through these perceptual abilities, but also by sensorial particularities (Baker et al., 2008; Black et al., 2017; Bogdashina, 2016). Moreover, the current clinical definition of autism includes an “excessive smelling or touching of objects” as one of the possible manifestations of hyper and unusual sensibility to one’s environment (APA, 2013). From these positive feelings for objects, it seems that love can easily be developed.

Similarly, one of the particularities of objectophilia is the precision with which the loved objects are described. The reasons given for their attractiveness are often very specific details of their arrangements, colors, textures or shapes. For example, some of the reasons fisheye buttons are attractive to the objectophile discussed earlier have to do with their “shape, texture, design, plastic material used, colours, [and] the way the light works at a number of different depths (surface, internally) (Marsh, 2010).” This type of precision suggests that, like autistic

individuals, objectophiles process the details of objects more immediately than their global appearance. This would be worth assessing through studies on visual perception in objectophilia.

A sensory aspect is also present and even dominant among objectophiles. The fisheye buttons are not just attractive because of their appearance, according to this objectophile, but also because of their sensorial manifestations: “the feel on [his] fingers, lips. The plasticness [sic] against the material they are attached to. The coldness against [his] skin. The feeling of power they have for [him]. The control that comes from their perfection” (Marsh, 2010).

4.3.3. An explanation in terms of predictive coding

Predictive coding particularities have been said to have an impact on both the aforementioned social and non-social manifestations. More specifically, researchers propose that predictive coding particularities can explain both the predictability and the accurate perception for the non-social features of the world in autism. What makes predictive processing particular for autistic individuals would be their attenuated “prior” knowledge (Pellicano and Burr, 2012). A prior is the probable distribution of the possible states of the world, which defines the expectation of some stimuli to be in these different states. Priors depend on the usual prevalence of these different states, and constitute our beliefs about our environment. A prior can be prone to inaccuracy and biases because it provides the probabilities of possible states of one’s environment, while being useful in attenuating possible ambiguity, noise and error, and making our perception reliable (but, depending on the probabilities in question, maybe not totally accurate).

According to Pellicano and Burr, (2012: 507), autistic individuals have “attenuated priors or ‘hypo-priors’”, meaning that the probability of the possible states of their environment is low,

given a broader set of hypotheses that have to be tested (the “priors are broader”). For neurotypicals, priors would be narrower, with a higher probability distribution. Therefore, in autism, evaluating a prediction about the occurrence of something in one’s environment would require the testing of more hypotheses. If this is the case, autistic individuals would be able to avoid some subtle biases in perception, which could explain the greater accuracy with which objects are perceived as well as the difficulties involved in generalizing experiences. This account would then explain the particular abilities in object detection, for which a broad prior knowledge allows a better discrimination. This is why perception would be particularly efficient when the object is clearly displaying all its features and does not behave unpredictably. Such predictive coding particularities would lead one to seek for that which is predictable, e.g., objects, in order to reduce the uncertain aspect of the environment. As Pellicano and Burr (2012: 509) explain, “becoming comfortable with new situations might also require many more exposures to a stimulus or context to overcome the potentially disadvantageous effects of less specific priors.” This explains the preference for “sameness” or desire to resist radical changes in one’s attitude towards others, which has been shown to characterize both autistic individuals and objectophiles.

These differences in predictive coding also impact sensory abilities (Pellicano & Burr, 2012). Without the perceptual abilities to generalize information, the incoming sensory inputs are not matched with any recognized pattern. That may explain the hypersensitivity that characterizes autism. It may also prevent the anticipation that is needed to make sense of complex stimuli and “lead to a sense of alarm and the often-reported experience of sensory overload” (Pellicano & Burr , 2012: 508). In other words, the sensory manifestations of autism could be attributed to the interpretation of the sensory systems: instead of interpreting sensory

stimuli by generalizing the information, sensory systems interpret them as new and potentially alarming (Ropar & Mitchell, 2002; Buckingham et al., 2016).

The fact that two manifestations of autism that characterize objectophilia result from one common causal mechanism strongly suggests that objectophilia could be a consequence of these manifestations. Further studies are needed to assess this likelihood, and to potentially determine the complementary underlying mechanisms of objectophilia.

5. CONCLUSION

We have examined several hypotheses pertaining to the determining factors of objectophilia. We argued that even if objectophilia is linked to synesthesia, as one study seems to indicate, it need not be among the determining factors of objectophilia. The autistic traits found in both dimensions of the description of ASD (i.e., particularities in social and communication behaviors, and restricted and repetitive activities and interests) are better candidates for the determinants of the particular relationships objectophiles develop towards objects than the synesthetic inducer-concurrent pairs. Moreover, the underlying mechanisms between synesthesia and objectophilia seem to differ considerably. The hypothesis that autism is one of the determinants of objectophilia is, therefore, both the most robust and scientifically accessible. Future studies would be needed to further support it, especially since, like autism, objectophilia might have heterogeneous manifestations and result from multidimensional causes. Complex interactions of biological patterns, environmental factors as well as social and contextual features may be at play in its development. Consequentially, it is only through collaborative interdisciplinary research projects that one can hope to reach a full account of the multifaceted nature of objectophilia.

Other aspects of autism concerning gender and sexuality could also shed light on objectophilia. The fact that objectophilia is more prevalent in women could seem to be at odd with the higher prevalence of autism in men. However, now that the idea that the autism phenotype corresponds to the one of an “extreme male brain” has been largely contested, new evidence has begun to emerge that autism could be associated with gender dysphoria (Thrower et al., 2020; van der Miesen et al., 2018). The relations between these new findings and the prevalence of women in objectophilia is, therefore, worth investigating. Moreover, if objectophilia were found to be a specific subgroup of autistic individuals, future research could investigate the causes of the differences in trajectories between the autistic individuals who develop objectophilia and those who do not (Bennett et al. 2018).

In closing, although the main reason for this paper is to provide a better understanding of objectophilia, by giving objectophilia more visibility in scientific research, we hope that our contribution and future work will enhance our overall understanding of objectophilia and potentially eliminate the prevalent prejudicial attitudes that make it socially unacceptable.

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