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How to cite:

Plassart, Anna and White, Rebekah C. (2017). Théodore Flournoy on synesthetic personification. Journal of the History of the Neurosciences: Basic and Clinical Perspectives, 26(1) pp. 1–14.

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Version: Accepted Manuscript

Link(s) to article on publisher's website:

<http://dx.doi.org/doi:10.1080/0964704X.2015.1077542>

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Théodore Flournoy on synaesthetic personification

Anna Plassart (1, 2, 4)

Rebekah C. White (3, 4)

1. Faculty of Arts, The Open University
2. Faculty of History, University of Oxford
3. Department of Experimental Psychology, University of Oxford
4. Christ Church, University of Oxford

Anna.Plassart@open.ac.uk, Phone: 07850 762 284

Rebekah.White@psy.ox.ac.uk, Phone: 01865 271 357

Abstract

In 1893, Théodore Flournoy published a landmark book on synaesthesia – *Des phénomènes de synopsie* [*Of Synoptic Phenomena*]. The book presented a pioneering chapter on synaesthetic personification, including numerous striking case examples, and it is frequently cited by 21st-century researchers as providing some of the earliest examples of the phenomenon.

Flournoy employed a broad definition of personification – the representation of stimuli as concrete and specific individuals or inanimate objects. This definition encompassed a more extensive set of phenomena than the definition used by researchers today, and was illustrated by cases that would fall outside of contemporary subtypes of synaesthetic personification. Yet, Flournoy’s seminal work remains unavailable in English, and the extent of the phenomenon that he described has not been discussed in the contemporary literature. We provide an unabridged translation of Flournoy’s chapter “Des personifications” [“Of Personifications”].

Keywords: Flournoy; Personification; Synaesthesia, 19th-Century Psychology

Théodore Flournoy

Théodore Flournoy is recognised as one of the founding fathers of experimental psychology (Figure 1). Born two years before Sigmund Freud, he studied medicine in Strasburg before studying experimental psychology in Leipzig with Wilhelm Wundt. He then returned to his hometown of Geneva in 1891, where he became a well-respected Professor of Psychophysiology. Flournoy founded the University of Geneva's first laboratory of Experimental Psychology in 1892, and co-founded one of the oldest journals of psychology in 1901 (the *Archives de Psychologie*). Today he is perhaps best known for his study of the medium Helen Smith in his 1900 book *Des Indes à la Planète Mars* [*From India to the Planet Mars*], which inspired Carl Jung's 1912 *Wandlungen und Symbole der Libido* [*Psychology of the Unconscious*].

Figure 1. Photograph of Flournoy, from his 1911 book, *Spiritism and Psychology*.

As Flournoy was starting out in his career as a psychologist, the field was in full expansion, and striving to establish its legitimacy as a natural science independent from philosophy and the arts. In the process, 19th-century psychologists were tackling a number of fundamental methodological questions, the most important being the relationship

between psychology and the natural sciences, including physiology. This was a question explored by the two psychologists who exerted the most influence on Flournoy's work. His teacher Wundt was interested in 'elements of consciousness', that is to say, in how basic sensations are compounded into consciousness and ideas. Wundt's method of enquiry relied on the subjective observation of one's own experience. The data collected in Wundt's experiments principally focused on basic sensations and perceptions, using objective empirical methods, such as reaction-time tasks. This was a method Flournoy replicated in his Geneva laboratory (Nicolas & Charvillat, 1998).

The link between the biological sciences and psychology was also explored, albeit in a different direction, by Flournoy's friend and lifelong correspondent William James. Unlike Wundt, James was interested in the functional processes of the mind, rather than in identifying its elemental structure. Inspired by Charles Darwin's theories, he applied the idea of natural selection to psychology, and examined mental phenomena as part of the process of environmental adaptation. In James' view, this meant that thought processes should be examined in their globality, and not isolated or carved up into basic elements. The method he advocated was therefore very different from Wundt's: it relied on introspective observation of personal feelings and thoughts, by "looking into our own minds and reporting what we there discover" (James, 1981, p. 185).

In his own work, Flournoy alternated between the approaches of Wundt and James. From his year-long stay in Leipzig, Flournoy retained Wundt's attempts to ground psychology in experimental methods inspired by the natural sciences, and he clearly saw himself as part of the rising movement striving to establish psychology's legitimacy as a science: when his Chair in experimental psychology was created in Geneva, he insisted it be placed in the faculty of sciences rather than in the faculty of arts, and happily recalled a few years later that the decision "acknowledged ... the existence of psychology as a specific discipline, with the same status as physics, botany or astronomy" (cited in Nicolas & Charvillat, 1998, p. 282). Yet, like his friend and correspondent William James, Flournoy found laboratory experiments wearing and "trivial" (James, 1920, vol. 2, p. 54): his true research interests lay in theory rather than practical experiments. It is this interest that eventually led him, like James, to focus on the emerging field of psychical research and occult phenomena, and which brought him fame through his study of the medium Helen Smith (Flournoy, 1900). His research interests at the outset of his career, however, lay in another mysterious phenomenon, which resisted the kind of elemental experimental testing

practiced by Wundt, and that his fellow psychologists could only study through a discursive introspective method closer to James': this was the phenomenon of 'coloured hearing', today better known as synaesthesia.

19th-century psychology and synaesthesia

Although synaesthesia is "likely as old as mankind" (Jewanski, 2013, p. 369), the condition was not described in the scientific literature until the beginning of the 19th century. In his medical dissertation, Georg Tobias Ludwig Sachs reported his experiences of numerous stimuli – letters, numbers, weekdays, time periods, and musical tones – as eliciting "a coloured idea" (Sachs, 1812, cited in Jewanski, Day & Ward, 2009, p. 297). He portrayed the triggering stimulus (the inducer) and resulting experience (the concurrent) with great precision, for example, "A and E are vermilion, A however is more cinnabar, E is more inclined to rose" (p. 297). Sachs' case was in fact typical of now-recognised synaesthetic phenomena, in which individuals experience "atypical merging of sensory and/or cognitive functions" (Jewanski, Simner, Day, & Ward, 2011, p. 284). In the 21st century, researchers have identified at least 60 different subtypes of synaesthesia (Day, 2005; 2014). Individuals with synaesthesia will commonly experience multiple different subtypes (Simner, 2012); for example, Sachs experienced grapheme-colour synaesthesia, time unit-colour synaesthesia, and musical note-colour synaesthesia (Day, 2014).

Synaesthesia had been a fashionable topic for several years at the point that Flournoy took up his Chair and worked at establishing his laboratory. A number of papers and case studies had been published throughout the 19th century, and the 1881 publication of a book-length study by Bleuer and Lehmann kick-started a flourish of new research. In the following decade, a "nearly unmanageable number of articles and books" were published on the topic (Jewanski, 2013, p. 381). In addition to Bleuer and Lehmann's book, many new case studies appeared (for bibliographies see Wheeler, 1920 and Mahling, 1926). Fechner had already published an empirical study of 73 synaesthetes (Fechner, 1876), and after 1881 further large-scale statistical studies were conducted, notably by Galton (1883) and Calkins (1893). 19th-century psychologists used these large-scale studies to identify and classify types of synaesthesia, but much of the discussion also focused on identifying the underlying causes of synaesthetic experiences. In the 1850s and 1860s several theorists put forth physiological explanations (e.g., ocular malfunction). Theories of mental associations started to appear in the late 1860s and early 1870s (Berti, 1865; Kaiser, 1872). And, in the final decades of the 19th century, the theories based on mental associations (supported by

Schenkl 1881, Quincke 1890, Calkins 1893 amongst others) competed with new physiological explanations based on the idea that the brain regions devoted to music, colour and language overlapped in synaesthetes (an idea pioneered by Lussana, 1873; Nussbaumer, 1873).

19th and early 20th-century synaesthesia research, however, was reliant on the discursive description of personal experience. In France, scientific enquiries were further muddled by the growing aesthetic fashion for synaesthesia, sparked by Rimbaud's landmark poem *Voyelles* [*Vowels*] (Rimbaud, 1883). This trend saw many Symbolist poets make heavy use of colour-sound pairings. Yet not everyone agreed to see synaesthesia as a mark of artistic genius and romantic sensibility: in 1893, the writer and social critic Max Nordau published *Entartung* [*Degeneration*], a scathing attack on 'degenerate art' that contained a critique of both genuine and fake synaesthetic experiences, and a skeptical assessment of the ability of science to distinguish the two (see Dann, 1998). The early psychologists' difficulty in devising quantifiable, independent measures of synaesthesia eventually meant that research on the phenomenon was unable to keep up with the new standards imposed by the increasingly-dominant behavioural school in the early 20th century.

In the second half of the 20th century, scientific interest in synaesthesia consequently "dwindled from being a phenomenon of considerable scientific interest to one that was virtually lost from science from the 1940s to the 1980s" (Baron-Cohen, n.d.), and Flournoy's work was cast aside along with most of the related 19th-century research. It is only when behaviourism was eventually replaced by the cognitive approach, in the late 20th century, that psychologists turned their attention towards synaesthesia again, and in turn, that historians of psychology became interested in Flournoy's investigations on the phenomenon (see especially Jewanski, 2013).

Flournoy's place in the history of synaesthesia research

Flournoy was one of the many researchers who became interested in synaesthesia after reading Bleuler and Lehmann's 1881 study. At the beginning of his career he set out to investigate the phenomenon with his cousin and collaborator Edouard Claparède, who was himself a synaesthete. In order to supplement the observations Flournoy had been privately collecting since 1882, the two researchers designed a questionnaire that was sent out in 1892. For various reasons, Claparède was unable to see the project through to completion, but Flournoy conducted analyses on the 694 responses that he received (371

of which he considered to be definite cases of synaesthesia). In the resulting book *Des phénomènes de synopsie* [*Of Synoptic Phenomena*] (1893), Flournoy detailed an unprecedented variety of synaesthetic experiences, which he divided into three categories: photisms, visual schemas, and personifications. In his view, synaesthesia was neither a romantic fad, nor a degenerative pathology: instead he adopted a moderate position, preferring to “suspend his judgement” until more research could be conducted (Flournoy, 1893, p. 250). In his book, Flournoy did not focus on the causes of synaesthesia, he did however propose three distinct laws to explain it:

- 1) the law of affective association: “the association which establishes itself between two representations ... following an analogy in their emotional character” (for instance: a colour and a letter inspiring a similar feeling of sadness) (pp. 20-21);
- 2) the law of habitual association: “results from repetition: two things which are constantly or habitually together end up being associated in the mind” (p. 37);
- 3) the law of privileged association or “opportune association” (Jewanski, 2013, p. 383): “there are things that are indissolubly linked in our memory or our thoughts ... because at one point, maybe only once ... their occurrence struck us and left an indelible trace in our nerve tissue” (p. 38).

In contrast to the single-factor explanations which prevailed before the 1880s, Flournoy’s ‘all-embracing’ approach has been hailed as one of the most important theories of synaesthesia developed in the late 19th century (Jewanski, 2013).

Flournoy’s methodology, however, remained based upon the usual qualitative discussion of personal experiences as presented by the synaesthetes. This discursive, subjective approach did not fit the behaviourist standards that would gradually become the norm in the coming decade; as such it is a fitting illustration of the perceived shortcomings of synaesthesia research from the point of view of mid-20th century psychologists. Deemed a dead end by behavioural psychologists, this approach nevertheless allowed Flournoy and others to discover a wide variety of synaesthetic phenomena. In this article we present one subtype – synaesthetic personification – on which Flournoy conducted extensive and innovative research; a subtype that has only recently been ‘rediscovered’ by 21st-century scientists.

Flournoy on synaesthetic personification

The phenomenon of synaesthetic personification was ‘rediscovered’ in 2002, and has since been the subject of much research interest (Amin et al., 2011; Cytowic, 2002; Cytowic & Eagleman, 2009; Day, 2005; Simner, Gärtnner, & Taylor, 2011; Simner & Hubbard, 2006; Simner, Mulvenna et al, 2006; Simner & Holenstein, 2007; Smilek et al., 2007; Sobczak-Edmans & Sagiv, 2013; Vijayasree & Rajasekhar, 2013). The term personification is used by contemporary researchers to refer to the attribution of gender and/or personality to triggering stimuli. In ordinal linguistic personification (Simner & Holenstein, 2007; also referred to as sequence-personality synaesthesia, Simner et al., 2011), triggering stimuli are ordinal linguistic units, such as letters, numbers, weekdays, and months. As but one example, Synaesthete AP, who has been extensively studied by Julia Simner and her colleagues (Simner & Holenstein, 2007; Simner & Hubbard, 2006; Simner, Mulvenna et al., 2006), described the number 5 as a “mother figure; funny by accident; does things around the house” (Simner & Holenstein, 2007, p. 696). In object-personality synaesthesia, triggering stimuli are inanimate objects, such as plants, computers, and geometric shapes (Amin et al., 2011; Smilek et al., 2007). Synaesthete TE, who was studied by Daniel Smilek and his colleagues (2007), described a novel geometric shape as “a preteen or a teenager. It’s very curious about things but it doesn’t have any friends. It sees things through something of a negative view, but not in the sense that it’s a pessimist. It’s not like it’s depressed or anything, but everything’s a little bleak. It just goes through its life. It’s just experiencing things; it doesn’t really think of past or future. It doesn’t dwell on anything; it just kind of experiences it and goes on. It’s an orangey-brown, more on the brown side” (p. 981).

Flournoy’s research belongs to a much earlier era of interest in personification phenomena, which peaked in the 1890s¹ (Calkins, 1893; 1895; Flournoy, 1893; 1894; Lemaître, 1901a; 1901b; 1914; Patrick, 1893; Pilo, 1894, as cited in Saint-Paul, 1895; Whipple, 1900). In this period, the term personification was used to refer to a broader phenomenon, and one that extends well beyond the usual definition of personification, as “the attribution of human form, nature, or characteristics to something; the representation of a thing or abstraction as a person” (Oxford English Dictionary: OED).

¹ Galton (1883) provided earlier observations of personification, although he did not refer to these as instances of synaesthesia.

The breadth of historical observations that were classified as synaesthetic personification can be traced back to Flournoy, whose seminal 1893² book *Des phénomènes de synopsie* contained a comprehensive chapter on the phenomenon, rich with diverse examples. Flournoy wrote “I give the name of *personifications* to concurrents that are enriched by borrowing from various senses as well as by intellectual ideas, whose complexity goes far beyond that of photisms and schemas, and lead to the representation of concrete and specific individuals” (translated from French, p. 219)³. Flournoy went on to say “The evocation of purely physical properties leads to personifications (if the term is still appropriate here) in the shape of inanimate objects” (p. 223), providing the example of a man for whom the vowel sounds /*ẽ*/ (which can be spelled in French *ain*, *ein*, *in*, *en*) elicited, when spelled *en*, the image of a tangle of hemp rope, and another man for whom the words “*Mardi*” (/maRdi/, meaning Tuesday) and “*Mars*” (/maRS/), when “heard, read or thought about” (p. 223), elicited the image of a dish of scrambled eggs.

Thus, contemporary readers of Flournoy’s chapter on personification will be particularly struck by the rich and varied case descriptions that he included under the heading of personification. These included: (1) the attribution of gender, appearance and personality to numbers, letters, weekdays, and proper names [Mrs L, an un-named 29-year-old lady, E.C., Miss G.G., an un-named 37-year-old lady, an un-named 16-year-old young man, Mr H.B.]; (2) the association between weekdays and symbols (e.g., circle, grey cloud: Mrs L); (3) the association between words and a food-type (Mr W.H.); (4) the experience of “seeing faces” in natural objects (Mrs J.G.); (5) the experience of numbers as having their own well-defined expressions (an un-named forty something lady); (6) the association between numbers and individuals who are known to the synaesthete (Mrs P.G., Mr R.S.).

In 1894, Flournoy logically expanded his definition of personification to better reflect the breadth of the phenomena he encountered: he now defined it as the “concrete representation of a personage – sometimes of an animal or a thing – being regularly awakened by a word that has no comprehensible relation with its curious associate” (Flournoy, 1894, translated, 1897, p.112). He provided the example of case M.E.F., for whom most common nouns elicited “personifications”. As a child, some letters elicited the image of a pair of trousers, and other letters elicited the image of a robe. Words elicited

² In the same year that Flournoy published his comprehensive account of synaesthetic personification, two other researchers independently provided case examples (Calkins, 1893; Patrick, 1893).

³ All of Flournoy’s (1893) quotes are extracted from our unabridged translation.

representations that were independent of their actual meaning. For example, the word “*requin*” (shark) elicited the image of “a large horse stationed near the subject and by the side of a load of hay” (Flournoy, 1897, p. 113). Weekdays elicited similarly detailed images. For example, “Thursday” elicited the image of “a man turning the knob of the kitchen door to go through that room to the next one” (Flournoy, 1897, p. 112).

Flournoy’s eclectic examples were matched by those of his contemporaries. Guy Montrose Whipple (1900) presented case *M* who personified letters, numerals and inanimate objects. Whipple provided a table detailing the associations that *M* reported for each letter. Although nearly all letters were described in terms of gender, appearance, or personality, there were exceptions. For example, the letter F was experienced as “Rough. A log of wood” (p. 390). *M* also saw resemblances between people and “other things animate and inanimate” (p. 390). Whipple explained that “one person appeal[ed] to *M* as a log of wood, another as toad, a third as a mosquito, a fourth as a walrus” (p. 390). Auguste Lemaître, a Swiss researcher and acquaintance of Flournoy, presented as a case of “personification” E.D., for whom hours were “worries” and minutes and seconds were “like things one should not concern oneself with” (translated from French, 1901a, p. 9). Lemaître also presented Maurice C., a 14-year-old boy who “personified” many words and syllables. Triggering stimuli elicited highly detailed and elaborate images – scenes, which primarily featured objects, but also included people, food, and animals. As but one example, when Maurice C. heard the word “*toujours*” (/tuʒuʁ/, meaning always) he visualised “a [brass] weight that was first green, then turned black, and finally turned into a pig nose” (translated from French, 1901b, p. 30).

Flournoy’s discussion of personification phenomena has not gone completely unnoticed by contemporary researchers: his account of the case of Mrs L (or Mme L), in particular, is regularly cited as one of the earliest accounts of what is now referred to as ordinal linguistic personification (Simner & Holenstein, 2007) or sequence-personality synaesthesia (Simner et al., 2013). Yet the historical literature, and Flournoy’s research specifically, are replete with examples of a broader type of personification, which remain essentially absent in the contemporary literature. Some of the examples that Flournoy presented, it must be noted, may not be classified as synaesthesia today, let alone synaesthetic personification. For instance, the lady who had the experience of “seeing faces” in natural objects (Mrs J.G.) would likely be regarded as exhibiting face pareidolia – the illusory perception of non-existent faces (for a contemporary example, see Liu et al.,

2014). Individuals will “often report seeing a face in the clouds, Jesus in toast, or the Virgin Mary in a tortilla” (Liu et al., p. 60). Face pareidolia is now a well-established phenomenon, thought to occur as a result of the visual system being exquisitely tuned to process face stimuli, given their social importance (Liu et al.). In contrast to this widely-investigated phenomenon, some of the other examples that Flournoy presented have remained unexplored until very recently. For example, in the chapter, Flournoy discusses an (unnamed) individual, for whom nearly all stimuli were experienced as being odd or even. Flournoy remarked that this was not a rare phenomenon, noting that the ascription of oddness and evenness to weekdays was perhaps more common than the ascription of gender to this time unit. But, despite Flournoy’s assertions as to the apparent frequency of the phenomenon, there have been no further discussions of odd-even synaesthetic attribution, nor cases described in the literature, until this last year. More than 120 years after Flournoy first described the phenomenon, two synaesthetes have been identified, for whom a range of stimuli are automatically experienced as odd and even (White & Plassart, 2015a). The subsequent discovery of an individual who experiences many stimuli as belonging to two different dichotomous categories (negative and positive) suggests that the phenomenon may be even broader than Flournoy supposed (see White and Plassart, 2015b).

Therefore, we believe that Flournoy’s comprehensive chapter “Des personnifications” [“Of Personifications”] – rich with varied examples – not only cements Flournoy’s status as one of the pioneers of synaesthesia research, but also provides a highly-valuable reference for contemporary researchers. The text presents cases of personification that match those in the contemporary literature, as well as cases that fall outside of known synaesthetic personification subtypes. Flournoy’s discursive and holistic approach allowed him to make potentially-relevant connections between personification and other peripheral phenomena that may have otherwise been missed. His thought-provoking discussion of personification has not received its due attention in the contemporary literature, most likely because it has been unavailable in English. A small section of this chapter, detailing a case who personified numbers and weekdays (Mrs L) has been translated into English (Simner & Holenstein, 2007), however the bulk of the chapter is not easily accessible to contemporary researchers. Thus, we present an unabridged translation of the chapter “Des personnifications”, taken from Flournoy’s 1893 *Des phénomènes de synopsie* (pp. 219-227).

Translation

Chapter VII

Of Personifications.

I give the name of *personifications* to concurrents that are enriched by borrowing from various senses as well as by intellectual ideas, whose complexity goes far beyond that of photisms and schemas, and lead to the representation of concrete and specific individuals. This will be easy to understand with an example taken from those extreme cases, so to say, in which personification is at its height. I owe the following observation to the kindness of a 46-year-old woman; healthy, cultured and very educated – Mrs L., who agreed to give me a written summary of her impressions as well as numerous complementary verbal explanations.

Mrs L. has always personified numbers, to such an extent that she could easily write novels about several of them. – “1, 2, 3 are children without specific personalities; they play together. – 4 is a quiet woman, engrossed in material preoccupations and enjoying it. – 5 is a young man, ordinary, of common tastes and appearance, spendthrift, selfish. – 6, a 16- or 17-year-old young man, very well-behaved, polite, sweet, with an agreeable appearance; all his tastes are refined. Average intelligence. Orphan. – 7, a trouble maker, although well-mannered; witty, generous, gay and likeable; capable of very good actions on occasion, very generous. – 8 is a dignified, proper lady. She is acquainted with 7 and has a lot of influence on him. She is married to 9. – 9, Mrs 8’s husband, selfish, fussy, self-centered, only thinking about himself, grumpy, always reproaching his wife with something or other; telling her, for instance, that he would have been better off marrying a 9, as together they would have made up 18, while with her he only gets to 17. Mr 9 enjoys using drugs, and amongst other things likes trying out the medicines advertised in the papers.”

10 and the other numbers are not personified. – This dramatisation of numbers into individuals with specific personalities pursues Mrs L. when she does her finances; she finds each has a particular voice and hears their conversations, which distracts her and confuses her in her accounts. She sees these characters face-on and from head-to-toe; their faces are not very clear but they are always dressed in the same way (all of this, incidentally, remains at the stage of mental images, and does not reach the level of hallucinations). They

are not real people who she knows, therefore she does not know how to account for this phenomenon, which goes back as far as she can remember and has almost not varied. Only a few of her creations have changed a little bit as she herself was growing up and getting older; thus 7, who was a “bad man” when she was a child, became later a trouble maker with loose morals; and 4, who used to look like a cook long employed by her parents, later lost this specific appearance, but remained a woman dedicating herself to material tasks, some sort of housekeeper.

Mrs L. possesses a few other interesting phenomena, although less marked. She only has coloured audition for certain low musical sounds, which appear to her purple. The first three days of the week do not give rise to any synopsia in her; but the last four display traces of symbols and personifications: “Thursday is a circle; Friday is a grey cloud; Saturday has something likeable about it. Sunday has the face of my father: soft, wise, framed by white hair.” – She only has one diagram, that of numbers: “From 1 to 10 I see numbers in a vertical line, going up; from 10 to 20 in a line inclined from right to left; from 20 to 30, a perfectly vertical line, like a ladder against a wall; from 30 to 100, blurry, vague lines.” – Lastly, she has a pronounced tendency to look for symmetrical distribution in letters and words: “The names and words that are not made of a regular number of letter have always left me with a disagreeable feeling, truly paining my eyes. In that regard, book titles and shop signs always give me a lot of work: I count the letters, and if their number is not even, I cut off the words so as to put an isolated letter in the middle. Thus in my mind I write the words Japan, alone in the following way: Ja-p-an, al-o-ne.”

This torment of symmetry, in the composition or the juxtaposition of words, is not rare. I have encountered it, often more pronounced, and with variations, in other people. Imagine it pushed to the extreme and becoming an obsession detrimental to individual or social life, and you will be able to add, under the scientific name of *typographic symmetromania*, to add another article to the already-rich chapter of the arithmomania of contemporary psychiatrists. Conversely, reduce it to weak proportions, and you will go back to a universal instinct, a branch of this need for order and regular spatial distribution that is at the root of all the arts and inspires great masters as well as the most vulgar of paint-slingers.

To go back to cases of personifications, they are rarely as pronounced as the one I

just detailed;⁴ many however let us guess more easily the analogical factor that, in Mrs L., only appears clearly in the assimilation of the holy day with the respected figure of her father (who was a pastor). I should say analogical *factors*, for they are many, and it is indeed their coming together in an indivisible beam that prevents their clear identification in this example; but they appear individually, as we will see, in several other cases in which the process of personification is less full, more rudimentary, and only extends to certain characteristics such as sex, physical aspects, moral qualities, etc.

The idea of gender or sex is sometimes induced by numbers (Galton noted this fact, which I have not encountered yet although it is probably not rare), and more often by the days of the week; thus a 29-year-old lady tells us that Monday, Wednesday and Friday are masculine, Tuesday and Saturday feminine, and Sunday neutral. Even more frequently, some weekdays appear as even, and the other as odd, even though opinions disagree about the specific attribution as they do about gender.⁵ Now let us suppose that this need to give a sex to things that hardly have one, such as numbers or days, is combined in a subject with the tendency to see them in colour; then the imagination will easily blend these complex characteristics in the representation of human characters dressed in a certain way, as is the case with E.C., a 10-year-old little girl, who sees Saturday as a man dressed in red, Friday as a woman dressed in blue, Thursday as a man in tartan, etc.

The evocation of purely physical properties leads to personifications (if the term is still appropriate here) in the shape of inanimate objects. We already saw the example of Mr X. (p. 50), for whom certain orthographic entities induce the idea of a mix of phonemes that are visible, audible, tangible, etc, in the same way material things do for us. Entire words sometimes have the same effect: for instance Mr W. H., 22, says that “every time I hear, read or thinks one of these two words, *Mardi* [Tuesday] and *Mars*, I think of a dish of scrambled eggs, which seem to me to have the same colour and shape.”

⁴ Two cases of number personification, quite analogous to the one I just related, have just been published by Mr Patrick, in the article cited earlier, in which one will also find interesting examples of visual schemas. (Pop. Sc. Month., Feb 1893, p. 508-510).

⁵ This is not about the oddness or evenness being attributed to days according to their number of appearance in the week, but about perceived qualities. What I wrote earlier about numbers also applies to oddness and evenness: there is, in these apparently abstract notions, something perceptual. It is too vague and indefinable to be noticed by most people, but some perceive it very clearly not only in weekdays but in everything in the world, even in faces and... vegetables. Thus a subject who displays many phenomena of this kind, used to see all the faces he encountered as odd or even, according to the length of the nose, etc., and still finds that lettuce and rhubarb are even, rice and pasta even, and so on. But this is no longer a phenomenon of personification proper.

Instead of physical qualities, moral dispositions can be given to the inducer; thus Miss G.G., 17 (who only has traces of photisms, and the dotted weekly schema seen in fig. 37), finds *a* gay, *e* mocking, *i* fat, etc. Even more frequently, it is not only exclusively material or moral qualities, but rather these ways of being (such as heaviness, awkwardness, elegance, etc.) which pertain to both domains because, while physical in themselves, they strike us and interest us particularly in our fellow men, and take on there a moral signification. These vague impressions that words leave on us independently from their conventional meaning (which I wrote about on p. 121) easily lead there; it is difficult to know whether the cause lies in the auditory, graphic, articulated, etc, nature of the word, or in a fabric of weakly-activated intellectual associations. What is certain is that the complexity of the inducer is only equal to that of the concurrent, which partakes of most senses as well as of the domain of morality. “Charlotte, says a 37-year-old lady, is too heavy, massive, doughy; Hélène is transparent like a piece of ice; Adèle is too light, thin, fragile, etc.” Such qualifiers, able to function both literally and figuratively, can easily lead to the amplifications of fantasy and provoke the creation of characters with specific physical and moral characteristics. We know how children, as well as many adults, tend to tell themselves stories they invented, and how little they need to activate this ability to dramatise.

Isolated graphic signs, such as letters and numbers, are maybe even better suited than full words to serve as anchors for these rich embroideries, thanks to the power of spatial forms as such, independently from absolute size, either to induce indefinable impressions of our general sensibility or kinesthetic sense, or to activate image with analogous external contours. Not much is needed in this regard to stimulate the creative fantasy we all possess to make the most unexpected parallels: the curve of a number, the rounded part or the upstroke of a letter, like the veins of wood or marble, the contours of a cloud or a flame, and the trick drawings that make you “look for the cat” – in a word, every spatial shape, even incomplete and floating, can bring to mind another visible thing, the contour of an object, the shape of an animal, the carry, attitude or features of person, and thereby their character.

Mrs J. G., 53, sees faces in flowers, wood knots, etc.; “baby faces in flowers and grimacing figures in all the other cases.” – A forty-something lady has always noticed that numbers appear to her, by their graphic shape, to each have their own well-defined expression: 3 has an awkward air, 4 looks solid and squarely put, etc. – A 16-year-old young man, who sees letters as capital letters, finds G, D and B heavy, obese, dull; N, C, I, F

elegant, as well as 3, 7, 1; H, Z, M, R, 2, 5, 8, solemn and dark, etc. – “A while ago, says Miss P. G., 16, every time I wrote the letter G, I saw one of my friends bowing; this impression has been fading away.” – “Some numbers, writes Mr R. S., 20, give me the schema of people I know, especially 3 and 5. Sometimes, when seeing a 5, I tell myself: Here is mister so and so. It is something that has always struck me, and which I have never been able to explain to myself.” – And to another, Mr H. B., 21, who has photisms and some schemas, consonants and numbers appear “like images of corporeal beings with anterior sides and posterior sides, heads, bellies and backs; except for zero and the letters m, n, x, v.” Those short examples are enough to show there exists a continuous gradation, from the vulgar process of assimilation, which is at the basis of all our perceptions and only remains unnoticed because of its consistency, to the most rich and fantastical personifications, as the case of Mrs L. illustrated for us.

There is yet another factor whose importance must not be ignored in the genesis of personifications. I am talking about the hidden treasures of sympathy and antipathy that we hold not only for things and people, but also for entities as abstract as letters and numbers. The latter in particular are appreciated in vastly different ways by everyone; we are not impartial towards them. Unbeknownst to us, there are some that our nervous systems have especially adopted, to the detriment of others. It has long been observed that in astronomical or meteorological observations amongst others, where the fixation of numbers leaves a certain margin to the personal appreciation of the observers, the latter take advantage of it to commit unconscious injustices, by stopping for example at a certain decimal rather than another when they need to evaluate the fraction of an interval. This unequal preference for different numbers can also be highlighted by an experience as simple as it is mind-numbing: ask a random person to dictate to you, or to write themselves, three or four hundred numbers (from 1 to 9) higgledy piggledy, as fast as possible, and giving the exercise just enough attention to not allow themselves to always repeat the numbers in their natural order. The recapitulation of these numbers, produced by a nervous machine left to its own devices, will show you that they are not all equally familiar to them; instead of each of the 9 numbers forming roughly 11% of the entire list, some numbers (different for every person) will barely form 2 or 3%, while others will go as high as 20%. Here I am not examining the multiple causes that contribute to the raw fact, I am only remarking that on top of the influences that act on everyone, such as the current year, there is a considerable personal coefficient, which most individuals have no idea about, but which some are very aware of. A man whom I asked to undertake this small

experiment (of course without telling him the aim) warned me straightaway that he would dictate almost no 4s, as he had never liked the number and avoided it as much as possible. Another, Mr D., a professor of mathematics, wrote to me: "I hate the number 8, and when I am tired I cannot add it up; to do an addition in which the numbers 8 and 5 for instance follow each other, I add 13 all at once; or when I am at 31 and need to add 7 and then 9, I add 9 first so as not to fall on a 38, or I add 16 in one go. When I was a little boy, I hated 6; towards 7 or 8 I started hating 8, probably because I struggled forming its shape." Some people count objects 3 by 3, instead of by groups of 2 or otherwise, etc. Such idiosyncrasies are extremely common and varied, and no one is entirely free of them.

But these phenomena are already beyond my topic, and I only mentioned them because they betray a tendency contributing in an obvious way to shape the moral individuality of numbers in cases of personification.

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