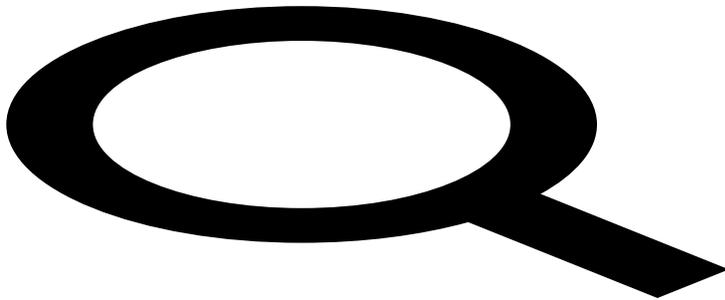


Is a lemon fast or slow?

Which one is brighter: the sound of a violin or the sound of a trombone?

Got the answer?

Without any apparent reason, you believe that lemons are fast and violins sound brighter than trombones. These beliefs happen to be shared by most humans, from an early age and cross-culturally. Now, where on earth did we get them from? Most of the earlier studies conducted since Edward Sapir focused on “sound symbolism”, i.e. the associations between sounds and meanings, but not directly on the associations between sensory dimensions - like brightness, pitch, size, etc. Even if you don't know anything about french names for birds, I could ask you whether you think that a pipit is a small or a big bird - and you would, without any apparent reason, judge that it must be a small one. It's certainly because, as a large majority of humans across cultures and linguistic groups, you think that the sound /i/ is smaller and brighter than the sound /a/, diminutive words, or names of small birds and fishes are much more likely to contain /i/ than /a/.



Rules have exceptions: Which is faster — a mallard or a kiwi?

Believing in things that don't really make sense and without any apparent reason seems, in that respect, not specific to the religious and spiritual domain. But are beliefs in the fastness of lemons, and in bright violins, of the same kind as beliefs in the Holy Trinity or in the spirits of the trees?

Believing is not a simple and unified thing. This anthropological fact is often minimized by philosophers, but fortunately not on this blog (see the debate between Maurice Bloch and Dan Sperber, [here](#) and [here](#)). Still, when invited to think about varieties of beliefs, most will agree that it comes from two things. The first and obvious one is the variety of contents. Believing that $2+2$ equal 4 is different from believing that it will rain tomorrow, and believing that Cicero was a great orator may be different from believing that Tully was a great orator. The second kind of difference comes from our attitudes toward these contents - broadly speaking, the degree of confidence we have toward them. You are absolutely certain that $2+2 = 4$, but only pretty confident that it will rain tomorrow.

Reflective vs. intuitive: Where should we look for the difference?

A further distinction illuminates the varieties of beliefs, stressing the difference between ways in which we come to hold these contents – e.g. in a intuitive or reflective way. You can have the intuition that it is wrong to push someone under a train to save five innocents, but come to reflectively believe that this is the right thing to do. This seems close to the previous difference in attitude toward the contents: we feel justified in holding the second belief, but not the first. The two distinctions should nonetheless be kept separate. One can be very confident in one’s intuitions, or on the contrary be suspicious of them and refuse to act according to them. The same goes for reflective judgements. Saying that someone is “very intuitive” is here misleading, and underscores something about attitudes: it doesn’t mean that she has more intuitions than others, but that she trusts and follows her intuitions more easily or often.

The distinction between intuitive and reflective beliefs often goes with dual-systems theories. It is drawn at the sub-personal level in terms of kinds of processes: intuitions result from processes (system 1) which are associative, unconscious, effortless, heuristic, whereas reflective beliefs come from rule-based, conscious, effortful, analytic, and rational processes (system 2).

Yet, as Dan suggests [in his post](#), there is a firmer manifest difference between intuitive and reflective beliefs – a difference that is consciously experienced and expressed in behaviour. Our beliefs come in different ways – intuitions are felt to be “mere knowledge of plain facts”, they come as obvious and somehow isolated, whereas reflective beliefs are felt to be held “for a good reason” (be it an argument or trust in the source) and to make sense within a more general set of beliefs, which one feels are lying in the background, ready to become explicit. This difference is also (and perhaps more clearly) manifested in the ways these beliefs are expressed or discussed: intuitions are stated but can’t lead to further elaboration, whereas reflective beliefs are discussed, argued for and criticized.

A first question here is whether the most important or basic difference between intuitive and reflective beliefs should be made at the manifest level. Perhaps this is a bit fragile (qua an introspective difference) or close to old-fashioned behaviorism (qua observed in practice). But arguably, this difference explains why and how we look for potential underlying differences in processing.

Looking for a distinction in contents: Are some contents specific to intuitions, or reflective judgments?

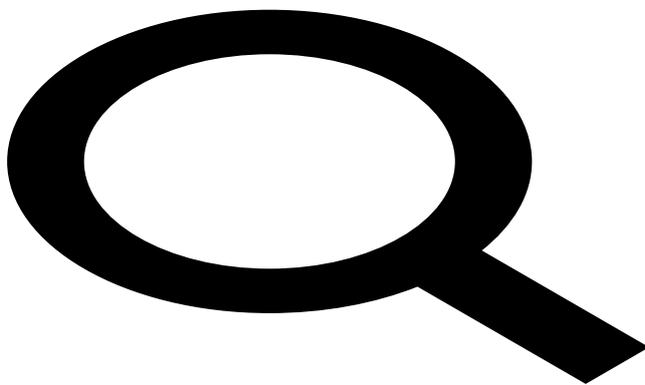
A more robust way to draw the difference resorts to something more akin to the difference in contents, than ways of being manifested. Following this line means finding contents that are specific to intuitions or to reflective judgments. In their discussion, Dan and Maurice argued about such a difference. Let’s grant that beliefs contents vary in terms of being more or less determinate. As adults, our belief that $2 + 2 = 4$ is fully determinate, in the way it wasn’t when we were 5 years old, and in a way that the dogma of the Holy Trinity isn’t. This is, I guess, the distinction that Sperber tries to capture in terms of propositional and semi-propositional content. Terminology doesn’t matter here. What matters is that the distinction doesn’t reduce to a difference in attitude or commitment (our readiness to doubt or wonder about semi-propositional beliefs, but not about propositional beliefs) but remains about contents. Accordingly, a believed content is fully determined (“propositional”) if the believer knows its truth-values over the range of all epistemically relevant worlds, vague if she knows them for some or most epistemically relevant worlds, and indeterminate (only “semi-propositional”) if she doesn’t know anything about its truth-value in any relevant epistemic world.

Let's go back to intuitive vs. reflective. One can think (like Dan Sperber) that indeterminate (semi-propositional) contents are specific to reflective judgments. Our reason for accepting these obscure contents can't come (by definition) from our evaluating their truth, and therefore only comes from us trusting the people whom we get them from. "Semi-propositional" contents are always social - they result from communication (linguistic or non-linguistic) and are held for reasons like trust, deference, etc. It is because a child is told that two plus two equal four or that there is something like the Holy trinity that he comes to believe it. He has no clue on what makes it true in the "relevant epistemic worlds".

While I agree that indeterminate contents can't come from an evaluation of truth-value, I don't think that they necessarily come from others. There is much room for indeterminacy coming from our own cognitive activities. Let's reconsider the previous intuitive judgments, about lemons being fast and violins bright. Or take better known cases of sound-shape correspondences. Watch for instance these two shapes:



One is called Bouba, and the other is called Kiki. Which one is which? As almost all of the subjects, you'll say that Kiki is the star-like one and Bouba the rounded one (Ramachandran, & Hubbard (2001)). Or again: which of the following shapes is called Mil and which is called Mal (Sapir, 1929)?



You were able to answer these questions and judge that Mil is (or must be) the smaller circle, yet have no idea of the reasons for which you made it. It seems obvious, and there is nothing more you can connect it to - like a good reason to say this. Judgments about cross-modal correspondences (e.g. holding between two apparently unrelated sensory dimensions or features) are being studied by cognitive scientists (see Spence, 2011 for a review). This goes back to the initial example - we intuitively know the answer to an apparently insane question like "are lemons fast or slow?".

The varieties of intuitions

There are many intriguing aspects of these correspondences and the judgments they lead to. For current purposes, the point is that these are relevantly called beliefs: people commit themselves, at least to a certain degree, to their truth, and most of them can be entertained in an explicit way. Now the contents of these beliefs certainly fail to be determined in any of the previous senses. There is

simply no way to make sense of what it is for the content “this shape must be called Bouba”, “this shape can’t be called Kiki” or “lemons are fast” to be true. Even what underlies the term or concept of correspondence, congruency or going-togetherness which structures these intuitions that “these two things must go together”, “Bouba goes more appropriately with that shape” seems to be beyond proper understanding and definition.

In a nutshell : this seems to be a very good case of intuitive indeterminate (non-propositional) content. Moreover, we cannot simply explain (at least by now) how these correspondences could come from things we perceive or sense. Being effortless, made without attention or awareness of reasons, based on broadly associative ways, these beliefs are certainly intuitive.

I don’t know what it implies for other “symbolic” beliefs - noticeably closer to the religious domain. Perhaps it gives us ways to think about some of them also being grounded in intuitions of this sort (I doubt that this would work with the Holy Trinity, but perhaps with other contents? Any idea of religious beliefs that would work along the lines of correspondences?).

More interestingly, it challenges us to think about another difference in kinds of contents for the intuitive vs. reflective distinction. Failing to be propositional or determinate is not specific to reflective judgments, or so I think these cross-modal cases show. As a further challenge, it also invites us to focus not just on the varieties of beliefs but on the varieties of intuitions. My suggestion here is that intuitions whose contents are somehow grounded in perceptual processing (but not perceived per se), like cross-modal correspondences, may represent a very distinctive subset of intuitions, contrasting with moral or linguistic ones, for instance.

Some references

On intuitive vs. reflective beliefs

Sperber, Dan (1997) Intuitive and reflective beliefs, *Mind and Language* 12 : 67-83 ([link](#))

On sound symbolism

Nuckolls, J. (2003). The case for sound symbolism. *Annual Review of Anthropology*, 28: 225-252. ([link](#))

Ramachandran, V., & Hubbard, E. (2001). Synaesthesia: A window into perception, thought and language. *Journal of Consciousness Studies*, 8: 3-34. ([link](#))

Sapir, E. (1929). A study in phonetic symbolism. *Journal of Experimental Psychology*, 12: 225-239. ([link](#))

Spence, C. (2011). Crossmodal correspondences: A tutorial review. *Attention, Perception, & Psychophysics*, 73: 971-995. ([link](#))

On dual processes

Evans, J. St. B. T. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology*, 59: 255-278.

Keren, G., & Schul, Y. (2009). Two is not always better than one: A critical evaluation of two-system theories. *Perspectives on Psychological Science*, 4: 500-533.

Kruglanski, A.W. & Gigerenzer, G. (2011) Intuitive and Deliberate Judgments Are Based on Common Principles, *Psychological Review*, 118: 97-109.