

Revised last section of

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## Size–Sound Symbolism Revisited

### *Methodological Comments*

Some of my arguments in this paper are not exactly of the kind linguists would expect and can, therefore, easily be misunderstood. So, in order to avoid misunderstandings and to elucidate my point, I propose to make a few methodological comments. On my discussion of Bahnar, for instance, the referee quoted above on phlogiston said that I was relying on one very obscure language and a single case study of certain aspects of it. “The conclusions from this thin material are stretched too thin for the universal validity that Tsur wants to find”. This arouses an intriguing methodological problem. The validity of my argument depends here, to a considerable extent, on the purpose of my discussion. Had I tried to find some universal validity, that criticism would have certainly been fatal to my argument. But I was engaged in a very different kind of activity: I was trying to expose a hidden inconsistency in Diffloth’s argument. I was not universalising, I was refuting an alleged counterexample to a received view by comparing the rules of the game followed by two scholars, as well as the outcomes of their inquiries. Pointing out that two scholars obtain different results by following different games and that one obtains similar results if one follows the rules of the same game with reference to the two corpora in question does not need a huge database. It requires just these two arguments to compare.

When I realised that my anonymous reviewer had misconstrued the status of my theoretical activities and speech acts, I was forced to ask the fundamental question: If I am not “generalising” or “universalising” from my data, what kind of theoretical activities and speech acts I am performing, anyway? In elucidating this issue, I will rely on three classical papers, one in aesthetics (Weitz, 1962); one in the philosophy of science (Smart, 1966) and one in the history of science (Kuhn, 1977). The latter two derive their test cases from physics. In what follows, I will elucidate the kinds of statements I am making, and the kinds of activities I am involved in. First, in critical discourse sentences of the indicative form may suggest several degrees of adherence to facts. Accordingly, my statements are of three different kinds, at least: indicative, representing the denoted act or state as an objective fact; hypothetical, suggesting an attitude toward the merely possible; and “crucial recommendations as to what to look for and how to look at it” in sound symbolism in particular, and poetic language in general (Weitz, 1962). Second, in many instances I am not

“generalising” or “universalising”, but am engaging in two other kinds of intellectual activity: theory construction and thought experiments. Neither requires a huge data base like “generalising” or “universalising”, but rather certain kinds of manipulations of a limited amount of data on various levels of organisation.

We are dealing with a complex event: there are strings and soundwaves that have certain measurable co-varying physical properties; there is a psychological assumption that the ear membrane and outer skin, which perceive the soundwaves, subliminally perceive some of those properties as well; this assumption, in turn, may account for the perception of such aesthetic qualities of the sounds as “thickness”. All this can be described, at various levels, in physical, psychological, and aesthetic terms. Theory construction has to do with the integration of various levels into a coherent whole, and moving from one level to another. The sentences describing each level by itself are typically indicative; the sentences that suggest moving from one level to another are typically hypothetical; the sentences that concern the relative emphasis of elements in the complex event are typically crucial recommendations. Such is the fuzziness of human natural language. When we say “I’ll come tomorrow”, we rely on our interlocutor’s communicative competence to decide what speech act we are performing: a statement or a promise. If a student introduces a question with “I want to ask a question” and I answer “do ask”, students laugh because they know that I have deliberately misconstrued the speech act as asking for permission. Likewise, when all my statements are treated as simply indicative, some of them are misconstrued.

A thought experiment has to do with the manipulation of an act or state of affairs, given in reality or contrived by the experimenter, so as to clarify one’s system of concepts and, simultaneously, yield new understanding of the act or state of affairs by exposing and eliminating hidden conflicts in one’s system of concepts. When I compared Ultan’s and Diffloth’s arguments, I was exposing a hidden conflict in the latter’s system. In performing thought experiments one does not treat the denoted act or state as an objective fact, but assumes, again, an attitude toward the merely possible.

Now consider the following issue. In this paper I disagree with Brown’s hypothesis as to the relationship between *Sound Symbolism and Source’s Size*. Let me recapitulate step by step the data upon which my position rests. Physicists have unambiguously established that the size of strings co-varies with their speed of vibration, and that speed of vibration co-varies with wavelength (that is, with the size of the wave). This is certainly quite rigorous. From the direction of psychology, there is an ubiquitous perception that when one strikes a note near the left end of the piano keyboard (where strings are thicker) it sounds deeper and thicker than a note at the right end. At this point a leap becomes inevitable. When I speak of the causal relationship between the measurable thickness of a string and the perceived thickness of the sound produced by it, I am committing an unavoidable leap. I must *assume* that the perception of thickness is mediated by the measurable length of the sound waves produced and the measurable amount of overtones in the perceptible

range that strike the perceiver’s ear membrane and outer skin. More precisely, I must assume that these features of the wave are perceived as “thickness”, offering this as a *plausible hypothesis* to account for the similarity of the perceived sound and its source. I am not presuming that there is hundred percent certainty that this is so, only that this hypothesis is more *plausible* than Brown’s.

These correlations between string size, speed of vibration and wavelength are well-known enough, and the intuitions discussed here, though unprovable, are general enough to meet Thomas Kuhn’s restriction in characterising thought experiments: “if we have to do with a real thought experiment, the empirical data upon which it rests must have been both well-known and generally accepted before the experiment was even conceived” (Kuhn, 1977: 241). As to the intuitions that boulders have low and thick voices whereas pebbles have high and thin voices, their force can be demonstrated by imagining a reverse situation. Suppose Disney gave a low thick voice to the pebble, and a high thin voice to the boulder; it would certainly be felt anomalous or ironical. There arises, therefore, the inevitable question posed by Kuhn: “How, then, relying exclusively upon familiar data, can a thought experiment lead to new knowledge or to new understanding of nature?”, that is, “What sort of new knowlege or understanding can be so produced?” (ibid.). Kuhn argues that from thought experiments most people learn about their concepts and the world together. Adapting his argument to the issue in hand, in learning about strings, vibrations and wavelength, readers also learn how intuitions concerning size–sound symbolism work (ibid., 253). Adapting further Kuhn’s discussion of Galileo’s thought experiment with the concept of speed, one may try to better understand what is wrong with Brown’s concept of “mediated association”. In Kuhn’s words, its defects lay “in its failure to fit the full fine structure of the world to which it was expected to apply. That is why learning to recognize its defects was necessarily learning about the world as well as about the concept” (ibid., 258). A slight shift of focus could considerably improve the internal logic of Brown’s position on Walt Disney’s “problem”. One may, for instance, apply to it Aristotle’s notion of analogy on which “proportional metaphors” are based: pebbles are to boulders like children to grown-ups. Consequently, the voice of pebbles must be to the voice of boulders like the voice of children to the voice of grown-ups. The voice of children is relatively thin and high; the voice of grown-ups is relatively low and thick.

In such a formulation the principle of mediated association would work exceptionally well, with reference to the voices of pebbles and boulders. However, in Brown’s formulation it fails “to fit the full fine structure of the world to which it is expected to apply”. Consider: “Thick people and animals and violin strings are usually loud and resonant. So, if the subject is required to guess, he will call the loud and resonant voice ‘thick’. This need not be because the voice shares some inter-sensory quality with the visual or tactile apprehension of thickness”. There is, however, much commonsense indication that the voice quality and body size of humans and animals are independent variables. First of all, thick people may have

soprano voices and thin people may have a resonant bass voice. Secondly, in the present context, “thick people and animals and violin strings” are not to be treated as one kind. “Thick sounds” and thick strings strictly co-vary, whereas the assertion about “thick people and animals” has only anecdotal, not even statistical, validity. Third, the voice does share “some inter-sensory quality with the visual or tactile apprehension of thickness”, irrespective of the external shape of its source: the size of vibration waves, or the amount of overtones in the audible range. And fourth but not least, as I have insisted time and again, our intuition is that we directly perceive a note struck near the left end of the piano keyboard as thicker than a note near the right end, and not by relating the sounds to some extraneous circumstances.

One could further improve upon Brown’s argument by referring to string instruments: the double bass, for instance, has not only thicker strings, but also larger overall body than the cello or the violin. This would point up an interesting difference between string instruments and people. String instruments have a hollow body full of air, so built as to amplify the sound by reverberating the vibration of the strings. Inside the human body, by contrast, there is no such hollow reverberating space. Vibrating air, unlike vibrating flesh, may generate a resounding sound. Likewise, we do not think of the inside of boulders as of some hollow space full of air. Again, it is the volume of the vibrating medium, not the visible size of a body that determines the perceived thickness of the sound.

No amount of measurement can prove or disprove a causal relationship between the measurable thickness of a string and the perceived thickness of the sound produced by it. In such leaps, in J.J.C. Smart’s (1966) words in a context of theory construction in physics, “expressions like ‘make more plausible’, ‘lead us to expect that’, or ‘strongly suggest’ apply, but where the logical relations of implication and contradiction do not strictly apply” (239). Smart points out that “‘rigour’, in the sense in which it is pursued in pure mathematics is not an ideal in applied mathematics (or physics). The conception of ‘rigour’ involved in physics is that whereby it makes sense to say ‘rigorous enough’” (ibid., 237). It would not be too far-fetched to claim that in literary theory, speech perception and other human disciplines less rigour is ‘enough’ for leaps even than in physics. But, in any case, if you want to do measurements, you must start out with a hypothesis, which I provide. The experimentalist will have to contrive an experiment to decide whether the perceived thickness of sound is correlated with the mass of one’s body or with that of one’s vibrating membrane.

### References

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