

Isomorphism: semantic structure, redundancy and contrast

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The isomorphic principle maintains that languages maximally preserve one-to-one correspondences between meaning and form. In historical linguistics, explanations of language change in terms of homonymy avoidance, synonymy avoidance or ambiguity avoidance all more or less explicitly hark back to the isomorphic ideal. However, though soundly rooted in Structuralist and Functionalist theory, isomorphic thinking has received major criticism in recent decades. Variation is now generally considered pervasive and often stable in language, rather than a fleeting anomaly. This makes the workings of isomorphism seem inconsistent and its use as an explanation of change gratuitous. Moreover, some changes have been shown to be strikingly un-isomorphic (De Smet et al. 2018). It has even been argued that many-to-many correspondences between meaning and form actually offer functional advantages (Van de Velde 2014).

In this talk, I want to reassess the value of the isomorphic principle. Although it needs to be recognized that violations of isomorphism exist and may indeed make good functional sense in their own right, there also remains strong and independent evidence in support of the isomorphic principle, not only from historical linguistics but also from language acquisition and animal communication. This evidence suggests that the isomorphic principle is not so much ill-conceived, as at times misunderstood. What is needed, therefore, is a better understanding of the nature of isomorphism and the conditions under which it operates. The following three principles are proposed.

First, isomorphism interacts with how the meaning side of the linguistic sign is organized. It is generally accepted that meanings are organized around a prototypical core sense, from which peripheral senses are derived (e.g. Geeraerts 1997; Evans 2005). It is proposed here that isomorphic pressure is stronger for core senses than for peripheral senses. This predicts that signs will mostly enter into variation over their peripheral senses. For example, in *he was upset with the verdict* the preposition *with* is used in one of its peripheral senses and competes with *at*, *about* and *over*; but in its core comitative and instrumental senses, as in *she opened the envelope with a knife*, competition with other prepositions is almost non-existent.

Second, meanings are often coded redundantly in the syntagm. For example, in *this man walks into a bar* the number of the subject is coded twice, first by *this* and then by the *-s* ending on *walks*. This type of redundancy is a design feature of nearly all communicative codes because it safeguards communication against the inevitable ‘noise’ of the environment. For example, Shannon (1948) famously estimates English prose as being 50% redundant. Although redundancy is an apparent violation of isomorphism, syntagmatic redundancy can also be regarded as an extension of the formal side of the sign and, thereby, as a way of sustaining polysemy. This principle can be expected to play out in semantic change: polysemy in a sign can be diachronically stable as long as the context of the sign offers sufficient clues for disambiguation.

Third, signs also maintain paradigmatic relations, which are generally believed to keep meanings in check through contrast. However, while paradigmatic relations can in principle enforce isomorphism, they vary in strength. It is proposed that contrast depends crucially on the salience of a ‘choice point’. Choice points are salient if they are structurally embedded and if they can be anticipated. This, among other things, predicts that systemic redundancy (where a language develops competing forms to express the same meaning) typically arises from semantic change outside choice points, in non-competitive structural niches. For example, English deontic *have to* developed primarily in contexts in which deontic *must* or *shall* could not occur.

In sum, it is the structural organization of language that largely dictates where and how isomorphism can exert its influence.

References

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