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Arbitrary reference: a probabilistic account

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It is a common practice in mathematical, philosophical, or even everyday reasoning to introduce a name for an object arbitrarily taken from the objects satisfying a certain condition. Thus, let *n* be an arbitrary natural number; let *w* be any world that @ accesses; there is a man who is taller than me, and let John be such a man; and so on. Even though *arbitrary names* like `*n*', `*w*', or `John' in these examples seem to syntactically behave as singular terms, their semantics is not so straightforward (cf. Fine 1984; Breckenridge and Magidor 2012; Boccuni 2013; Woods 2014). `*n*' arbitrarily refers to a natural number; `*w*' arbitrarily refers to a world that @ accesses; and `John' arbitrarily refers to a man who is taller than me. But what does `arbitrarily refer' exactly mean? This paper provides a probabilistic account of arbitrary reference. The basic idea is to understand arbitrary reference of the form that '*a*' arbitrarily refers to some object taken from a set A as follows: the probability that `*a*' refers to a specific object *d* is 1/|A|, if *d* is in A; and 0, otherwise. I show how to assign a probability to (the truth/falsity of) a sentence containing one or more arbitrary names based on the probabilities of their reference. Finally, I explain how this probabilistic account justifies Universal Generalization and Existential Instantiation, where arbitrary names play a crucial role.

References

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