Universe of Discourse

1880 | On the Algebra of Logic | CP 3.174

De Morgan, in the remarkable memoir with which he opened his discussion of the syllogism (1846, p. 380) has pointed out that we often carry on reasoning under an implied restriction as to what we shall consider as possible, which restriction, applying to the whole of what is said, need not be expressed. The total of all that we consider possible is called the *universe* of discourse, and may be very limited. One mode of limiting our universe is by considering only what actually occurs, so that everything which does not occur is regarded as impossible.

1893 | Grand Logic 1893: Chapter X. Extension of the Aristotelian Syllogistic | CP 2.517-8

De Morgan and his followers frequently speak of a “limited universe of discourse” in logic. An unlimited universe would comprise the whole realm of the logically possible. In such a universe, every universal proposition, not tautologous, is false; every particular proposition, not absurd, is true. Our discourse seldom relates to this universe: we are either thinking of the physically possible, or of the historically existent, or of the world of some romance, or of some other limited universe.

But besides its universe of objects, our discourse also refers to a universe of characters. Thus, we might naturally say that virtue and an orange have nothing in common. It is true that the English word for each is spelt with six letters, but this is not one of the marks of the universe of our discourse.

1897 | Multitude and Number | CP 4.172

Whether the constituent individuals or units of a collection have each of them a distinct identity of its own or not, depends upon the nature of the universe of discourse. If the universe of discourse is a matter of objective and completed experience, since experience is the aggregate of mental effect which the course of life has forced upon a man, by a brute bearing down of any will to resist it, each such act of brute force is destitute of anything reasonable (and therefore of the element of generality, or continuity, for continuity and generality are the same thing), and consequently the units will be individually distinct. [—] If you and I talk of the great tragedians who have acted in New York within the last ten years, a definite list can be drawn up of them, and each of them has his or her proper name. But suppose we open the question of how far the general influences of the theatrical world at present favor the development of female stars rather than of male stars. In order to discuss that, we have to go beyond our *completed* experience, which may have been determined by accidental circumstances, and have to consider the possible or probable stars of the immediate future. We can no longer assign proper names to each. The individual actors to which our discourse now relates become largely merged into general varieties; and their separate identities are partially lost. [—] The possible is necessarily general; and no amount of general specification can reduce a general class of possibilities to an individual case. It is only actuality, the force of existence, which bursts the fluidity of the general and produces a discrete unit. Since Kant it has been a very wide-spread idea that it is time and space which

introduce continuity into nature. But this is an anacoluthon. Time and space are continuous because they embody conditions of possibility, and the possible is general, and continuity and generality are two names for the same absence of distinction of individuals.

When the universe of discourse relates to a common experience, but this experience is of something imaginary, as when we discuss the world of Shakespeare's creation in the play of Hamlet, we find individual distinction existing so far as the work of imagination has carried it, while beyond that point there is vagueness and generality. So, in the discussion of the consequences of a mathematical hypothesis, as long as we keep to what is distinctly posited and its positive implications, we find discrete elements, but when we pass to mere possibilities, the individuals merge together. This remark will be fully illustrated in the sequel.

1897 | Multitude and Number | MS [R] 25:2

In all discourse, or reasoning, there are *virtually* two parties. Either there are actually two parties, as when one speaker addresses an audience of one or more persons; or else one person reasons out something with himself, and even then, the difference between his conceptions and opinions before and after a given operation of thought results in his influencing himself much as one person influences another; so that we may say that even in this case there are *virtually* two parties.

The discourse of these two parties must relate to something which is *common to the experience of both*, or else they will be quite at cross-purposes. This common experience considered as a collective whole of units, the logicians for the last half century [have] commonly called the *universe of discourse*.

1902 | Universe (in Logic) of Discourse | DPP 2:742; CP 2.536

In every proposition the circumstances of its enunciation show that it refers to some collection of individuals or of possibilities, which cannot be adequately described, but can only be indicated as something familiar to both speaker and auditor. At one time it may be the physical universe of sense (1), at another it may be the imaginary "world" of some play or novel, at another a range of possibilities.

The term was introduced by De Morgan in 1846 (*Cambridge Philosophical Transactions*, viii, 380) but De Morgan never showed that he fully comprehended it. It does not seem to be absolutely necessary in all cases that there should be an index proper outside the symbolic terms of the proposition to show what it is that is referred to; but in general there is such an index in the environment common to speaker and auditor. This De Morgan has not remarked; but what he has remarked has likewise its importance, namely, that for the purposes of logic it makes no difference whether the universe be wide or narrow. The idea of a limited logical universe was adopted by Boole and has been employed by all subsequent exact logicians. There is besides a universe of marks or characters, whenever marks are considered substantively, that is, as abstractions, as they commonly are in ordinary speech, even though the forms of language do not show it. Thus only, there comes to be a material difference between an affirmative and a negative proposition. For it will then alone be one thing to say that an object wants some character common to all men and another to say that it possesses every character common to all non-men. Only instead of giving *three* qualities it gives four, for the assertion may be that an object wants some character common to all non-men; a point made by ancient writers.

In 1882 O. C. Mitchell extended the theory of the logical universe by the introduction of the idea of ‘dimension’.

The "(1)" in the first paragraph refers to the first entry under "Universe" in the DPP: "The collection of all material things".

1902 | Minute Logic: Chapter IV. Ethics (Logic IV) | CP 6.351

… I wish my description of what is true or false, to apply to what is not only true or false generally, but also to what is true or false under conditions already assumed. Whatever may be the limitations previously imposed, that to which the truth or falsity is limited may be called the *universe of discourse*. For example, at the mention of a certain name, every person initiated into the Eleusinian mysteries invariably experiences a feeling of awe. This is true. It is therefore true that every person initiated into the Eleusinian mysteries always experiences a sentiment of awe; not universally, but only under the limitations already understood before this is said.

1903 | Lecture II [R] | MS [R] 455:3-4

Logicians call […] a collection of things or subjects of force, to which the whole discussions relates, the *universe of discourse*. This universe consists in the first place of certain mutually well-understood centres or subjects of force well-understood to be different from one another; secondly, of certain subjects of force well-understood to exist, but not thoroughly understood to be known to be different from any of those of the first class; and thirdly of an indefinite supplement of subjects of force presumed to exist but of which there has been no definite recognition. Summing up the matter, we may say that the universe of discourse is the aggregate of subjects of the complexus of experience-forces well-understood between the graphist, or he who scribes the graph, and the interpreter of it.

1903 | Graphs, Little Account [R] | MS [R] S27:9-10

…if one person is to convey any information to another, it must be upon the basis of a common experience. They must not only have this common experience, but each must know the other has it; and not only that but each must know the other knows that *he* knows the other has it; so that when one says ‘It is cold’ the other may know that he does not mean that it is cold in Iceland or in Laputa, but right here. In short it must be thoroughly understood between them that they are talking about objects of a collection with which both have some familiarity. The collection of objects to which it is mutually understood that the propositions refer is called by exact logicians the *universe of discourse*.

1908 | The Bed-Rock Beneath Pragmaticism | CP 4.561 n. 1

…the Phemic Sheet iconizes the Universe of Discourse, since it more immediately represents a field of

Thought, or Mental Experience, which is itself directed to the Universe of Discourse, and considered as a sign, denotes that Universe. Moreover, it [is because it must be understood] as being directed to that Universe, that it is iconized by the Phemic Sheet. So, on the principle that logicians call "the *Nota notae*" that the sign of anything, X, is itself a sign of the very same X, the Phemic Sheet, in representing the field of attention, represents the general object of that attention, the Universe of Discourse.

The insertion in square brackets was added by the editors of the *Collected Papers*

nd | The Principles of Logical Graphics | MS [R] 493

The *universe of discourse* is the aggregate of the individual objects which "exist," that is are independently side by side in the collection of experiences to which the deliverer and interpreter of a set of symbols have agreed to refer and to consider.