Mass and *Count* in Language and Cognition: Some Evidence from Language Comprehension

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In linguistics and the philosophy of language, the mass/count distinction has traditionally been regarded as a bi-partition on the nominal domain, where typical instances are nouns like 'beef' (*mass*) vs. 'cow' (*count*).

In the present paper, we argue that this partition reveals a system that is based on both syntactic features and conceptual features, and present experimental evidence suggesting that the discrimination of the two kinds of features has a psychological reality.

We account for the mass/count distinction by a binary classification of nouns based on a syntactic feature [± tn] ('transnumeral') and a conceptual feature [± mn] ('mass'), with the following diagnostics: Nouns are [-tn] if and only if they obligatorily occur in their plural form when denoting more than one realisation of the nominal concept. Nouns are [+mn] if they refer to homogeneous masses, and [-mn] if they refer to objects.

According to this classification, 'beef' is [+tn, +mn] and 'cow' is [-tn, -mn]; syntactic differences go together with conceptual differences here. However, this is not necessarily so. Collective nouns like 'cattle' behave like 'beef' syntactically, but fall into one class with 'cow' conceptually: they are not marked for number, and are therefore [+tn], but they refer to objects, i.e., they are [-mn]. Hence conceptual features are not in a one-to-one correspondence with syntactic features:

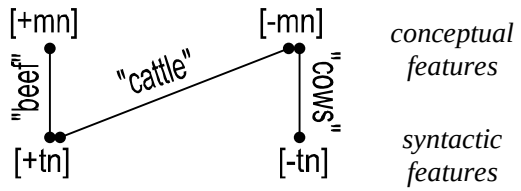

Figure 1: Dissociation of conceptual and syntactic correlates of the mass/count distinction

Does this distinction have a psychological reality? We addressed this question by investigating whether facilitation of lexical activation (in the form of priming) can be obtained for [-mn] versus [+mn] nouns in language comprehension: we investigated whether exposure to a [-mn] noun (the *prime*; e.g. 'furniture') reduces the time needed for the subsequent activation of another [-mn] noun (the *related target*; e.g. 'cattle'), in comparison to the activation of a [+mn] noun (the *unrelated target*; e.g. 'beef').

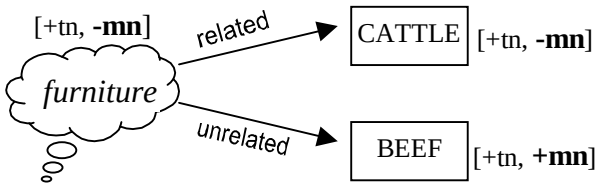

Figure 2: Experimental prime-target pairs

Since the [-mn] nouns we used were collectives (i.e., they were syntactically [+tn], like all [+mn] nouns), the difference between related and unrelated targets was restricted to the conceptual feature [± mn].

We conducted two studies. In study 1, primes were presented auditorily (via headphones) in a sentential context; in study 2, primes were presented visually (on a computer screen) as isolated words. All targets were presented visually and appeared immediately after the prime was heard (study 1) or seen (study 2). Subjects performed a lexical decision on the targets (and on non-experimental probes), i.e., they had to decide whether they saw a word or a non-word. Reaction times were measured for related versus unrelated targets.

In both studies, after [-mn] primes reaction times were faster for [-mn] targets than for [+mn] targets: facilitation for [± mn] was evident both in sentential contexts (study 1) and in word lists (study 2), and for auditory input (study 1) as well as for visual input (study 2).

We interpret this as evidence that the [± mn] distinction, as a conceptual correlate of the nominal mass / count partition, has a psychological reality independently of the syntactic distinction of nouns.

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