

November 15, 2004

To: Professors Liz Spelke and Marc Hauser

Re: Nomination of Gennaro Chierchia for an MBB Faculty Fellowship

We are writing to nominate Professor Gennaro Chierchia (see enclosed curriculum vitae) for an MBB Faculty fellowship. Gennaro Chierchia is one of the world's leading linguists. His work has focused on semantics and its interface with syntax, pragmatics, and cognitive science. He has made significant and lasting contributions in four areas of research.

His early work was on predication and argument structure. The empirical focus of this line of research concentrated on "predicative nuclei" of various sorts, ranging from small clauses to infinitives, gerunds, and control structures. This work led Chierchia to develop an original theory of properties (directly inspired by an idea that goes back to Frege but exploiting type-free techniques developed by P. Aczel, S. Kripke, S. Feferman and others) that allows for properties to be "nominalized" (turned into individuals). This line of research includes his work on how the self is linguistically represented (e.g. through "de se" and logophoric pronouns) as well as his work on unaccusatives (which has circulated since 1989, but was published, in its original form, only this year). This work elegantly illustrates how the investigation of specific linguistic constructions is intertwined with foundational issues about general properties of grammar.

A second line of research concerns anaphora and presuppositions, especially anaphora in non C-command contexts. Building on work by Groenendijk and Stokhof, H. Kamp, I. Heim and others, Chierchia has argued that the relevant facts require a "dynamic" semantic framework, according to which sentences are not mapped onto truth conditions but into something like update functions (i.e. ways of updating one's information state).

A third line of research has investigated mass and plural nouns from a crosslinguistic stand point. Such nouns are known to occur in argument position without articles in languages like English, but not in some other languages (e.g., French). This topic naturally leads to an investigation of how the determiner system (and hence the referential and quantificational system) may vary across typologically diverse languages. Chierchia has put forth various interrelated ideas that have generated a rich debate in cognitive science. In particular, he has proposed that mass nouns are "inherently plural": while count nouns segregate pluralities from singularities, mass nouns apply indistinctly to both. He has also shown how this idea relates to the contrast between "object" vs. "substance" as put forth and explored in the work of cognitive psychologists like S. Carey and L. Spelke. Finally, he has argued in favour of the idea that mapping onto meaning is subject to parametric variation, much like syntax (the "nominal mapping parameter").

A fourth line of research has to do with phenomena at the interface with pragmatics. Having observed that scalar implicatures (such as the one responsible for the exclusive vs. inclusive interpretation of *or*) are sensitive to the same contexts that affect polarity sensitive items (such as *any*), Chierchia proposed that implicatures be computed recursively, in tandem with ordinary sentence denotation. This entails that the standard modular view that pragmatics takes place *after* semantic computation has followed its due course is incorrect. This proposal is currently the focus of lively debate both among theoretical linguistics and experimentalists working on reasoning and the acquisition of scalar implicatures.

In short, Gennaro Chierchia is probably the world's leading linguistic semanticist. However, his work crosses disciplinary boundaries, having direct relevance for such fields as psychology, artificial intelligence, and philosophy, making him an ideal candidate for an MBB faculty fellowship. Furthermore, Chierchia would bring to the university expertise in an area that is sorely lacking.

With best wishes,

Alfonso Caramazza (Psychology)

Susan Carey (Psychology)

Jay Jasonoff (Linguistics)

Research project.

My research for the year 05-06 will focus on numbers, number marking and the nominal system. This research is a development of my interests in mass and plural nouns and my recent work on scalar implicatures and scalar reasoning. I propose to address the following issues:

- (a) Contrary to what has been claimed, classifier languages like Chinese do display clearly grammaticized forms of the mass/count distinction (Cheng and Sybesma 99)
- (b) Number marking languages (like English) display the phenomenon of “fake” mass nouns, like *furniture*. Such nouns have the morphosyntax of mass nouns, but are cognitively count (Barner and Snedeker, forthcoming)
- (c) The phenomenon of “fake” mass nouns appears to be limited to number marking languages. Classifier languages with fake mass nouns are unattested. Why? And does this reveal something deep on the nature of the contrast vis a vis the cognitive contrast between objects vs. substances as characterized in the work of Carey and Spelke?

My hypothesis is that the mass count contrast has both a “substantive” component (rooted in our cognitive system) and a “formal” one (in the sense of formal semantics). The former manifests itself through vagueness (the minimal samples of certain types of things are only vaguely specified); the latter takes the form of a type theoretic distinction in the denotation of mass vs. count. The structure of classifier languages (being similar to the mass part of syntax in number marking languages) is such that it enables only the substantive part of the distinction to emerge. The pursuit of this hypothesis leads to the necessity of addressing in depth the status of numbers, numerical expressions and measure phrases across languages. This in turn cannot be done without taking into consideration the contribution of pragmatics to scalar reasoning. And has to be consistent with findings concerning numerical cognition.

My project is to develop a new formal model of the mass-count contrast, numbers and number marking based on the ideas just sketched and, hopefully exploiting to the fullest the strength of Harvard’s Cognitive Science community, to explore its consequences for broader issues such as the cognitive contrast between objects and substances, numerical cognition, language pathology, the role of vagueness in categorization and reasoning.

Gennaro Chierchia