Diversity and Performance:

Networks of Cognition in Markets and Teams

Contemporary organizations face a major challenge: They should be innovative, not simply capable of being inventive but of organizing creativity that is acclaimed. This research project will address the socio-cognitive challenge of producing a novel creation and one, moreover, that is not only experienced as new but is also recognized as useful, even exciting. Creating something genuinely new requires breaking out of existing categories, perhaps by reconfiguring and recombining them in unexpected ways. As such, from the standpoint of cognition, we can think of this as a process of *re-cognition*. But the more radical the re-cognition (i.e., the greater the departure from existing categories), the greater is the risk that it will not be meaningfully and positively recognized by the audience. It is for this reason that this process is a *socio-cognitive* challenge.

This project is inspired by new insights from economic sociology (Callon and Muniesa 2005; Muniesa 2014; Lépinay 2014; MacKenzie 2006; Beunza and Stark 2012; Knorr Cetina 2005; Knorr Cetina and Bruegger 2002) and aims at studying cognitive challenges from an economic sociology perspective. At first glance, cognition seems inherently individualistic and, therefore, the sole province of the decision sciences such as psychology and economics. What does sociology, as the discipline in which the basic unit of analysis is irreducibly *a relation*, have to say about cognition? In fact, it is precisely this irreducible relationality that can be the source of valuable new insights from a sociological approach to cognition.

The sociological perspective turns particularly meaningful in those cases in which the unit that is creating the cultural product is not an individual but is a team. From their prior work on earlier projects, team members bring exposure to stylistic elements that can be available for recombination. We can think of the members’ prior exposure to these elements as stylistic portfolios, and focus on the cognitive distance of the stylistic portfolios among the members of a creative team. Requiring prior exposure to more diverse stylistic elements, radical innovation is likely to entail significant cognitive distance.

Although necessary for innovation, however, cognitive distance comes at a cost: members that are cognitively very distant might have difficulty comprehending each other. Are there ways that this cognitive dissonance can be positively mobilized? In particular, are there social structural factors that can combine with cognitive distance for creative, game changing, success? Differently from relations between actors and objects or the curious sociality among nearly or actually anonymous *rivals* (Beunza and Stark 2004, 2012), we confront here actors who must collaborate.

The project proposes an historical cultural network analysis of the lineages formed by intersecting careers. It suggests that teams are composed not simply of individuals but of groups members who had worked together in the past and that these groups can be isolated, brokered, or overlapping. Teams in fields that reward creativity face several challenges. First, in striving for novelty, they risk producing a product that cannot be assimilated to the tastes of critics and consumers (Cattani, Ferriani, and Allison 2014). A cultural product can be innovative without being successful; and it can be successful without being innovative. Creative success requires novelty that is recognized as excellence (Cattani and Ferriani 2008) – novelty that stands out and is deemed outstanding. Second, producing a creatively successful cultural product requires a diverse array of stylistic elements that can be available for recombination. Teams whose members have been exposed to more diverse stylistic elements have more cognitive distance than those in which the members have very similar cognitive portfolios. The challenge is that while cognitive diversity contributes to novelty, high levels of cognitive distance can pose coordination difficulties (e.g., Nooteboom et al. 2007).

This project proposes to study the social structural factors that can help make assets of ambiguity and turn misunderstanding into productive tension. Possible hints come from the concept of *structural folding* (Vedres and Stark 2010) that pointed to a distinctive position in network topology at the intersection of cohesive communities. Actors at the structural fold are insiders, participating in dense cohesive ties. But because they are simultaneously members of multiple cohesive groups, they have familiar access to diverse cognitive frameworks available for recombination. This also questions the transmission model of networks (Podolny 2001) thereby challenging the deeply taken-for-granted notion that network analysis should model flows of information.

**Goals**

* The project proposes to test the combined effects of structural folding and cognitive diversity for the field of music, starting with jazz recording sessions. The database will involve publicly available data from the Discogs listing which, like the list of credits for films, contains the names of the musicians from recording sessions that released at least one recording.
* The most challenging part of this project will be to capture cognitive distance. To do so, we need to have data that codes the actual musical content of the tracks released from the recording session. Fortunately, such data exist because companies like Pandora, Echo Nest and Spotify build their music recommendation programs precisely around such algorithms.
* With these data on the stylistic elements of recordings and the names of the musicians who recorded it, we will be able to reconstruct the cognitive (stylistic) career history of each musician and thereby construct a measure of the diversity (cognitive distance) among the musicians on that recording.

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***Research Agenda and Timeline***

Research goals mainly involve the development and finalization of two scientific papers to be submitted to top-quality journals in the field of organization studies and economic sociology. In particular, a main study (from first-year topic #2) and an ancillary study (from first-year topic #1) are expected as outcome of the research agenda. The main study will consist into a qualitative research on data from cultural and creative field. It will involve participant observation and application of ethnographic methods. It will also involve cutting-edge instruments from historical social network analysis, as well as tools for quantitative-descriptive data analysis. The ancillary study will cover a combination of theoretical insights, literature review, and overall contribution to the issue of career diversity. It will require in-depth effort to link scholarly research to real-world issues – thereby helping the diffusion of scientific research outside the academic sphere.

Table 1 shows the timeline of the research project by bimonthly. It shows important landmarks that represent the overall goals of the research. Presentation of preliminary and consolidated results (marked as PP and DP respectively) are required for the advancement of the research, and for contributing to the diffusion of project’s outcomes. During the mid and final bimonthly periods of 2021 the two studies resulting from the research period have to be finalized in the form of papers (goal marked as SP in Table 2). Each paper will be written in English, and conform to the highest standards required from scholarly research.

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| **Table 2. TIMETABLE** | Semester 1 | Semester 2 |
|  |  | B1 | B2 | B3 | B1 | B2 | B3 |
| **Study #1** | (Main Study) |  |  | **PP** |  | **CP** / **SP** |  |
| **Study #2** | (Ancillary Study) |  |  |  | **PP** |  | **CP** / **SP** |

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| PP: | Present preliminary results at scientific seminars and conferences. |
| CP: | Present consolidated results at scientific seminars and conferences. |
| SP: | Prepare paper for scientific publication. |