Coordinating actions: interaction, language, and technology in collaborative workplace activities

(1 Postdoctoral Researcher position)

Department of Philosophy, University of Milan, via Festa del Perdono 7, 20123 Milan (Italy)

Title – Coordinating actions: interaction, language, and technology in collaborative workplace activities

Supervisors – proff. Giampietro Gobo and Alessandro Zucchi

Purpose – To study the coordination and articulation work in team.

Approach – ethnomethodology, cognitive sociology, ethnopragmatics

Methodology – observational, participative, interpretative and contemplative

Methods – ethnography, videography, discourse and conversational analysis

Findings – To highlight the links among body, senses and social activity at work, in order to understand the main features, requirements and strategies for coordination and cooperation in teamwork.

Practical implications – To outline bodily, cognitive, pragmatic, organizational and social strategies, methodologies and techniques in order to convert simple groups in successful cooperative teamworks.

Social implications – Educating people to cooperation instead of competition.

ERC sectors
- SH1_10 Organization studies
- SH2_11 Social studies of science and technology
- SH4_9 Use of language: pragmatics, sociolinguistics, discourse analysis
- PE6_9 Human-computer interaction and interface, visualization and natural language processing
- PE8_11 Ergonomics, man-machine interfaces

Italian sectors
- SPS/07 – Sociologia Generale
- M-FIL/05 – Filosofia e Teoria dei Linguaggi

Keywords – Language, interaction, work, technology, organization, cooperation, coordination, articulation work, collaboration, ethnomethodology, cognitive sociology, distributed cognition, communities of practices, practice-based studies, workplace studies, discourse and conversation analysis.

Salary – For **Italians** the monthly net amount of the fellowship is 1500 euros (1 year = 12 monthly); for **foreigners** is 2,000 euros (1 year = 12 monthly);
This amount includes expenses for occupational accident insurance and public liability insurance.

The project, which is jointly led by Professors Giampietro Gobo (sociologist and methodologist) and Alessandro Zucchi (semantics and pragmatics), uses video-ethnographic methods and will put particular emphasis on organizational, sociological and sociolinguistic approaches to coordination and cooperation. Applicants are expected to have a strong inclination for interdisciplinary work and the potential for excellence in research and publications. There are no restrictions on the applicants’ Ph. D. background, provided it is relevant to
the topic of the project. The position is initially intended for two years. A two-year renewal is possible, depending on funding.

The postdoctoral fellow will be a member of the Department of Philosophy and will participate in the wider interdisciplinary research community of the department, whose members are philosophers, sociologists, linguists, anthropologists, psychologists, and cognitive scientists;

**Deadline** – The deadline for application is **November 15th 2016**. Applications submitted after this deadline will not be considered.

**Who can apply?** Applicants are required to include:
1. a research proposal (about 2-pages, bibliography excluded) according to the topic of the research line,
2. a CV
3. an abstract of the Ph.D. thesis
4. a list of publications
5. any other qualification which can be useful to prove their scientific production as well as their attitude to research activity.

The PhD (or equivalent degree received abroad) must be earned within the date of stipulation of the individual contract and anyway not later than **February 28th 2017**.

We refer potential applicants to the official call for application available at
Italian version: [http://www.unimi.it/cataloghi/ass_collaborazione_ricerca/BANDO_tipo_A_2016%20per%20sito.pdf](http://www.unimi.it/cataloghi/ass_collaborazione_ricerca/BANDO_tipo_A_2016%20per%20sito.pdf)

The application form is available from:
English version: [https://air.unimi.it/rm/public/postDocFellowship.htm?&rand=0.25707259296771](https://air.unimi.it/rm/public/postDocFellowship.htm?&rand=0.25707259296771)

Informal enquiries on the nature of project and the application procedure are welcome.

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- Alessandro Zucchi (alessandro.zucchi@unimi.it - [http://www.filosofia.unimi.it/zucchi/](http://www.filosofia.unimi.it/zucchi/))

**Academic degree requirements:** Ph.D. (sociology, anthropology, linguistics, psychology and related disciplines)

**Scientific fields of candidates’ research activity:** organization studies, workplace studies, social studies of science, anthropology of language, social and cultural psychology, sociolinguistics.

**Preferred additional competences:** good computer skills; expertise with ethnography, video analysis, discourse and conversational analysis; knowledge of CAQDAS would be valued.

**Appreciated additional know-how** – fund raising (Horizon 2020, Research Fellowship Programs, Marie Curie, ERC grants).
Description

Most activities, whether at work or in everyday life, take place in **groups**. Many activities that seem to be **individual** activities (such as going to the supermarket, smoking, take the bus etc.) in fact often occur in coordination with others. Furthermore, many decisions that are taken by individuals (such as the decisions of enrolling in a course, buying a book, etc.) rely on a broad (and often tacit and unconscious) negotiation work with other people. In this sense, cooperation is a central and essential element in human activities.

**Know how, local ecology and materiality**

Activities in groups, in order to work properly, require constant collaboration and cooperation (rather than competition) among members. The outcome of an action, in the sense considered here, is a **situated activity**, locally organized and collectively achieved, that takes place in a context in which humans and technology often interact and sometimes conflict, and it may be accomplished by means of **discursive practices**. The core of work as situated activity is the concept of **practice-based knowledge**. Then to work means to **know-how**, to act in a competent and oriented manner in order to achieve a collective aim (the content of work).

Notice that to work is much more than to perform an activity which has been planned in order to achieve a predetermined objective, since plans by themselves do not determine the actual course of situated actions nor explain them properly. In this regard, Suchman (1987) provides the example of descending a river in a canoe: before putting it in the water, you can plan the river glide path; but when it comes to rapids, canoeists leave aside the plan and makes use of all their skills. Therefore, plans are an ingredient of actions (an artifact that helps in situated reasoning), however not by themselves mechanisms which produce actions. For this reason, the situated experience can never be totally proceduralized.

Hence, knowledge involved in performing actions, in the relevant sense, is not located in people's heads only, but anchored in the surrounding material world (Norman 1988). Cognitive activities cannot be only mental, but they rely on the material elements of the context, that anchor the necessary information supports. Indeed, the latter are playing a major role. For example, adults’ math calculation in work situations follows an ongoing situational logic, which makes use of visual and other aids, devised in relation to the context. Objects of the context help us remember, measure, benchmark (Lave, Murtaugh and de la Rocha 1984). For this reason, the teamwork can usefully be considered as a socio-technical system in which technology and humans mingle within an ongoing local logic. The neglect of this feature of teamwork explains many of the failures when new technologies are introduced in an organization, because of a simplistic representation of the work activities that had to be supported by technology.

Knowledge is both an ongoing cooperative activity and a distributed practical achievement (Hutchin 1990), circulating within a community of practice (Lave and Wenger 1991), which coordinates itself internally and externally, through constant and recursive feedbacks, **alignments** (Latour 1990, Suchman 2000, 2003 and 2007) and **translations** (Callon 1986). Teamwork is a perpetual performance based on a (sometimes) improvised choreography (like a theatrical play or a jazz session), based on acts to be performed and material elements available at the moment. Teamwork is rarely a routine, an activity based on pre-established tasks which design a plan of action.

**Articulation work and discursive practices**

Teamwork moves within an ongoing articulation and orchestration of different mobilized types of knowledge. It usually takes place through discursive practices. For example, in the coordination of a surgery teamwork (Mondada 2014: 138), discursive practices are embedded in the instructions delivered through short turns, imperative verbs, modal constructions (in negative and affirmative forms), with deictic elements, localizations, pronouns referring to
objects, uttered in isolation from other talk, not followed by any verbal response. Also prosody (i.e. timing, tone or pitch) plays a decisive role. The study of talk-in-interactions therefore allows to inquire into what people actually do when they work in groups, the so-called 'missing what' (Garfinkel and Wieder 1992, 203), which defies the traditional studies of work in groups.

Coordination activities can be defined as a work report, whose purpose is the maintenance and reproduction of everyday sociality (Gherardi 1991), both in the organization and outside of it (with other social relations). To this purpose, a large part of the work is done in order to ensure that the activities can be carried out smoothly. This is what Corbin and Strauss (1993) call "articulation work". The latter highlights how the accomplishment of a work is an ongoing, collective and coordinated activity. Ordinary breaches of everyday routines, such breakdowns, require a repair work and re-negotiation of previous agreements.

The existing and shared division of labor in specialized and coordinated tasks is not enough; it must be continuously re-activated, that is reproduced daily and locally. Engeström (1999, 31) called this activity knotworking, a concept that recalls (and opposes) the idea networking. The expression suggests that it is not enough to texture relations, because the latter should be fixed down, knotted and made relatively enduring, also by means of material objects or ad hoc practices.

Maintaining a common orientation, configuring awareness, coordinating bodies and social senses

Heath and Luff (1992) and Heath et. al. (2002) show how individual tasks, based on a clear division of labor and responsibility, rely on collective work, i.e. on maintaining a common orientation in the activity, producing and sustaining awareness and distributed attention. This implies that, in a teamwork, the intelligibility of a scene, the possibility of coordinating tasks and activities, relies on specific socially organized communicative practices. Hence, the common orientation is achieved through members' bodily work. Polanyi (1958) uses the concept of tacit knowledge in order to underline the way in which the body 'embraces' cognitive processes. Following Merleau-Ponty (1945), Sudnow (1978) documents the "knowledge of the hands", i.e. as experienced pianists can play without looking at the piano. This is possible not so much, because they have a perfect mental representation of the keyboard, but for having educated their own body to the size of the piano, its keyboard and the intervals elapsing between the keys. Hence, the body and the senses play a key role in coordinating activities. This is true not only from the physiological point of view. For example, sight, according to Goodwin (1994, 1995, 1996a, 1996b, 1997), is an exquisitely social and cultural activity, oriented by the cognitive tasks that have to be undertaken within pre-existing professional frames. Indeed, "professional vision" means to communally construct the way to see the world and find in it the relevant properties of objects. In this sense, vision is a discursive and gestural practice, historically structured, relationally organized and mediated by different artifacts. The training to see is not a private and occasional experience, but a relationship that lasts over time within specific activities. What a member of a group sees, then, is constituted and made meaningful and accountable by the way in which the member positions him/herself within a broader set of practices [Goodwin 2000, 163]. This way becomes an epistemic frame [Knorr-Cetina 1981] useful to understanding the portion of the reality which (institutionally) competes to certain activities. Consequently, Goodwin’s findings seem to corroborate the assumption that (at least in professional contexts) sight always works within conceptual schemes and theoretical frameworks, and is therefore an eminently social and situated activity.

Cooperation among and within senses

The cognitive sciences have documented that our senses interact with each other in such a way that our learning is driven by multisensory processes (Pascual-Leone, Amedi, Fregni and Merabet 2005). The examples abound and they pertain to our everyday experience. Members ‘look’ with ears, because noises are a valuable source of information. Our ears ‘look’ when, watching a film, we are convinced that the voice of the actor is emanating from the screen,
when in fact the loudspeakers are positioned along the sides of the cinema hall. We ‘understand’ with our hands (like a doctor when he palpates a patient’s body). We ‘listen’ with our hands: to decide whether the wood has been made sufficiently smooth, a carpenter wipes the surface with a thin sheet of paper, so that he can better perceive any roughness through the scraping noise. We also ‘see’ with our hands, as in the case of a blind painter able to draw by touch: recent studies have shown, indeed, that the painter’s visual cortex is activated on touching an object. The eyes are able to ‘smell’, as exemplified by the enologist who judges the density of a wine not only from its aroma but also from its color. Indeed, some researchers have been able to deceive sommeliers’ taste buds by dyeing white wine red.

Conclusion

In order to study the coordination of actions and activities, the research findings described in the previous paragraphs have several interesting consequences:

1) the cooperation (and not competition) among senses is ‘natural’ feature;
2) the collaboration among senses is a bodily requirement of any individual action;
3) the cultural bases of senses (sight, hearing, taste, smell and touch) envisions the possibility of a (new) social physiology, and opens to an explorations of other (so far) neglected senses;
4) the coordination of any individual and collective action is primarily based on a pre-cognitive and pre-linguistic requisites (Garzone et. al. 2010)
5) the coordination is an ongoing, recursive, situated, locally organized and collective achievement.

Preferred case studies

The coordination and workplace studies are today an area with a highly diversity of case studies. Hence, the candidates are free to design any research topic they wish, fitting in this wide area. However, will be particularly welcome projects dealing with teamwork in settings related to:

- music (choirs, chamber orchestra, symphony orchestra, jazz ensemble, jazz combo),
- sports (training, pit stop in motorsports, martial arts) and
- operating rooms (surgery).

The winner will be helped and assisted to find the appropriate setting for her/his research.

References

Goodwin, C. [1995], *Seeing in Depth*, in *Social Studies of Science*, n. 25, pp. 237-274
Mondada, L. (2014), *Instructions in the operating room: how the surgeon directs their assistant’s hands*, in *Discourse Studies*, 16(2): 131-161.