tao Digital Library

An international multidisciplinary paper series devoted to the study of organizational action, organizational change, and organization and well-being. Founded by Bruno Maggi.

DEBATE ON WORK ANALYSIS FOR PREVENTION

DÉBAT SUR L'ANALYSE DU TRAVAIL POUR LA PRÉVENTION

DIBATTITO SULL'ANALISI DEL LAVORO PER LA PREVENZIONE

EDITED BY BRUNO MAGGI AND GIOVANNI RULLI

Abstract

The Interdisciplinary Research Program "Organization and Well-Being" is aimed at identifying the relationships between the choices that structure the work processes, and the people's health, defined in terms of physical, mental and social well-being. A method allowing to connect the analysis of organizational choices and the biomedical analysis of their consequences on the involved subjects has been the object of studies and discussions for three decades. This debate includes comments expressed from points of view concerning: ergonomics, work psychodynamics, work sociology, work psychology, ergology, linguistic activity. The way to conceive organization, action research, inter-disciplinarity and multi-disciplinarity, in the various approaches here represented, are the main object of discussion.

Keywords

Work analysis, Well-being, Organizational action, Action research, Inter- and pluri-disciplinarity.

Debate on work analysis for prevention / Débat sur l'analyse du travail pour la prévention / Dibattito sull'analisi del lavoro per la prevenzione, Maggi Bruno, Rulli Giovanni (Eds.). Bologna: TAO Digital Library, 2017.

ISBN: 978-88-98626-11-3

tao Digital Library

The TAO Digital Library is part of the activities of the Research Programs based on the Theory of Organizational Action proposed by Bruno Maggi, a theory of the regulation of social action that conceives organization as a process of actions and decisions. Its research approach proposes: a view on organizational change in enterprises and in work processes; an action on relationships between work and well-being; the analysis and the transformation of the social-action processes, centered on the subject; a focus on learning processes.

The contributions published by the TAO Digital Library are legally deposited and receive an ISBN code. Therefore, they are to be considered in all respects as monographs. The monographs are available online through AMS Acta, which is the institutional open archive of the University of Bologna. Their stable web addresses are indexed by the major online search engines.

TAO Digital Library welcomes disciplinary and multi- or inter-disciplinary contributions related to the theoretical framework and the activities of the TAO Research Programs:
- Innovative papers presenting theoretical or empirical analysis, selected after a double peer review process;
- Contributions of particular relevance in the field which are already published but not easily available to the scientific community.

The submitted contributions may share or not the theoretical perspective proposed by the Theory of Organizational Action, however they should refer to this theory in the discussion.

ISSN: 2282-1023
www.taoprograms.org – dl@taoprograms.org
http://amsacta.cib.unibo.it/

Pubblicato nel mese di giugno 2017
da TAO Digital Library – Bologna

DEBATE ON WORK ANALYSIS FOR PREVENTION

EDITED BY BRUNO MAGGI AND GIOVANNI RULLI

Table of contents

TAO DIGITAL LIBRARY - 2017

Introduction

The approach to work analysis for prevention that since 1983 has characterized the Interdisciplinary Research Program "Organization and Well-being" (O&W) has been discussed several times. A research programs is nurtured mostly by discussion, and almost fifty seminars in three decades have been devoted to this goal.

Many meetings can be recalled: the ones with occupational physicians, with hygienists and epidemiologists, prevention and hospital operators, union representatives, company workers and managers, scholars of various fields such as labor law, economics, social and political sciences, education, engineering, sociology, psychology, ergonomics…. One can also recall, in particular, some dialogues: in Bologna, in 1998, with the approach of the Laboratoire d'Ergonomie Informatique of the University Paris-Descartes; again in Bologna in 2002, with the approach of the Département d'Ergologie of the University of Aix-Marseille; in Milan, in 2009, with the work psychodynamics developed by the Escola Politécnica of the University of São Paulo; in Milan, in 2010, with the approach of the activity clinic of the Conservatoire National des Arts et Métiers of Paris.

A book about the methods of work analysis (Faïta, Maggi, 2007) was published following a seminar at the Institut Universitaire de Formation des Maîtres of Aix-en-Provence in 2005. The text of a lecture introducing the approach of the O&W Research Program at the 3rd Ergonomics Conference of the Escola Politécnica, University of São Paulo in 2006, was also published, in English, French and Italian in the electronic editions of the TAO Digital Library, University of Bologna (Maggi, Rulli, 2012), and, at the same time, in Portuguese in a collective book edited by Laerte Idal Sznelwar and Fausto Mascia, professors at the Escola Politécnica of São Paulo and promoters of such Ergonomics event.

This brief introduction to the approach that characterizes the activities of the Research Program O&W, which seemed to be useful to disseminate in several languages in order to inform and acquire comments, critiques, suggestions, recently constituted the main reference for the debate that here we are presenting. This introduction evokes the theory and the method of the approach, and it shows a case of analysis in which the implied subjects, by utilizing the method, have reiterated such analysis and the transformation of their work situation for two decades. But it also appears to be very adequate for the activation of a debate, as three questions are addressed to the disciplines concerned with work and with the approaches aimed at its improvement: how to consider the organization, in particular for prevention purposes; what is position of the subjects involved and what is the researcher's position, in the analysis; how to overcome the disciplinary boundaries in order to interpret in a unified way the numerous aspects of work.

Other references have been added in the debate, in particular to a text concerning the analysis of a work process concerning the welding activity for nuclear engineering (Maggi, Rulli, 2014), which shows in detail how the utilized method allows the connection between the workers' interpretation of the organizational choices and the biomedical interpretation of the consequences of such choices on the involved subjects' health and safety.

Six scholars representing approaches with which fruitful exchanges already have occurred, although in different times, participated to this common debate by providing an articulation of different points of view pursuing goals similar to the goals of the O&W Research Program.

The debate develops in the following order: from the point of view of ergonomics by Jean-Claude Sperandio, emeritus professor of psychology at the University Paris-Descartes; from the point of view of ergonomics and work psychodynamics developed in Brazil by Laerte Idal Sznelwar, professor at the Escola Politécnica, University of São Paulo; from the point of view of work sociology, according to Gilbert de Terssac's orientation, by Jens Thoemmes, research director at CNRS, University of Toulouse Jean-Jaurès; from the point of

view of work psychology, according to Yves Clot's activity clinic, by Bernard Prot, who is currently teaching at the Centre de Recherche sur le Travail et le Développement of the Conservatoire National des Arts et Métiers of Paris; from the point of view of Yves Schwartz's ergology, by Renato Di Ruzza, emeritus professor in economics at the University of Aix-Marseille; from the point of view of the linguistic activity, by Daniel Faïta, emeritus professor of general linguistics and co-founder of the équipe d'Ergonomie de l'activité des professionnels de l'éducation at the University of Aix-Marseille.

The comments characterized by these points of view are followed by the replies of the authors of the debated text, promoters since the mid 80's of the O&W Research Program with other colleagues of various disciplines. Bruno Maggi, graduated in law, has been professor of organization theory and methodology of social sciences at the Universities of Bologna, Milan, Turin and Venice, and invited professor in various universities and research centers in France, Brazil, Canada. He has been teaching in several faculties and degrees: law, economics, education sciences, philosophy, sociology, psychology, ergonomics, medicine, engineering. His interdisciplinary theoretical framework concerns mainly the organization conceived as regulation of social action, whose evaluation includes the well-being of the acting subjects (Maggi, 1984/1990; 2003/2016). Giovanni Rulli, physician, specialized in occupational medicine and public hygiene, is a member of the Direction of the health service in the north-west of the Lombardy region, Italy. In 1994, he took over the course of organization theory and work analysis at the Specialization School of Occupational Medicine at the University of Milan, course initiated by Bruno Maggi in 1981, and he currently teaches at the University of Insubria. His main publications concern the interpretation of prevention and stress (Rulli, 2010; 2014).

We are very grateful to all the participants to this debate. It allowed to emphasize, through the different points of view here represented, on the one hand the proximities and the distances of the involved approaches, and on the other hand the fundamental traits of work analysis for prevention developed

within the framework of the O&W Research Program. A debate is obviously always open: we hope that it will continue fruitfully in the future.

TAO Digital Library

From the point of view of ergonomics

***Jean-Claude Sperandio**, Université Paris-Descartes*

Introduction

The Program "Organization and Well-being" (from now on O&W), directed by Bruno Maggi, started in 1983 and still active today, presents several common points with ergonomics, even though its approach is not considered part of such field.

It is true that the boundaries of the discipline of ergonomics are not very precise. The notion of well-being at work – including comfort, safety, decrease of fatigue, physical and mental constraints, decrease of health hazards, increase of effectiveness, optimization of work spaces – which appears in the title of the O&W Program, summarizes in itself the very purpose of ergonomics, as its definitions imply[1]. Moreover, in the last fifteen years there has been a focus on the prevention of stress, psychosocial risks and work suffering (see Grosjean, 2005, for a summary and a discussion). The field is quite extended and it keeps getting larger.

Thus, besides an obvious purpose convergence with ergonomics, the O&W Program provides the disciplines oriented towards the improvement of work (including ergonomics) with the opportunity of interdisciplinary synergies, both theoretical and methodological. In order to sustain an interdisciplinary discussion, the Program's authors propose several questions, to which this commentary attempts to answer from an ergonomics point of view, although only the author is responsible for it.

[1] Several definitions of ergonomics are available on the website of the Société d'Ergonomie de Langue Française, http://ergonomie-self.org/lergonomie/definitions-tendances/.

Just a little wink to begin

The work of welding, object of Maggi and Rulli's text of 2014, was known by Jean-Marie Faverge, one of the founders of francophone ergonomics, as already in 1955, in the *princeps* contribution written with André Ombredane, *L'analyse du travail*, he chose such activity, which he learnt himself, to illustrate several approaches to work analysis (Ombredane, Faverge, 1055: 200 sgg.): personal learning of the task, observation of workers during their work activities and study of their work traces. According to Faverge, welding typically requires a good level of experience, and it includes an immediate dynamics of information processing and a strategy for ranking quality criteria.

It is worth mentioning that personal learning, today rarely recommended in contemporary ergonomics, was not aimed at substituting systematic observation of workers, but rather to help the analyst practicing pertinent observations.

The purpose of the Program: primary prevention

The first issue proposed by the authors of the O&W Program concerns its purpose. May this kind of field analysis and intervention have an effective role for a primary prevention of health risks and hazards in the workplace? On the contrary, devoting an insufficient attention to it, or just restraining to normative recommendations, or having an inadequate conception to work organization, could hinder primary prevention?

The convergence between the purpose of the O&W Program and the purpose of ergonomics is clear: to analyze work in order to improve it. For both, the analysis of work and activities is not an end in itself but a necessary tool for improvement. However, we notice that safety and health prevention, as well the improvement of workers' well-being, both fundamental ergonomic goals, are not the only goals of ergonomics, which is a discipline that aims at facilitating the use of systems and improving work performance and quality.

We also find a convergence on the idea that is best to intervene at the beginning of the design process (design of work places, materials and

organization) rather than having to correct later the defects. This is quite consistent with the classic distinction between design ergonomics and correction ergonomics, two sides and the same discipline which require somewhat different methodologies.

Organizational action

Organizational action, defined in several contributions by Maggi[2], is a central concept in the O&W Program. Briefly, it concerns the ways in which workers may utilize their experience to organize their work, acquire information, decide, hierarchize criteria and strategies of their actions, independently or not from the prescriptions. Even if the used terms differ, as well as the theory and the degree of focus, operational self-organization is a research subject of interest for ergonomics since its origins, within a framework of other factors that may influence work and prevention. Faverge, already cited above, paid significant attention to the sophisticated mechanisms of individual adjustment that regulate the operational behavior of workers. Co-authored with collaborators, two of his contributions (Faverge, 1966; Faverge *et al*., 1970) show the many micro organizational adjustments that operators perform individually within of the "large" work organization within enterprises. These adjustments, outside any prescriptions, sometimes in opposition to prescriptions and rules, are presented as necessary for the systems to function properly.

Another old example concerns the work of air traffic controllers, extensively analyzed since the 60's in relation to the training needs of controllers and the increasing computerization of air traffic control. One of the most classic results is that controllers continuously regulate their activity according their own estimate of the workload, in relation of their competence, by hierarchizing and adapting the urgency criteria. The distribution of activities among members is also regulated in relation to such workload and to the experience of the "cooperators", outside of any imposed prescriptions. Adjustments depend on their knowledge about the job (Sperandio, 1969; 1972).

[2] For a detailed presentation, see: Maggi, 2003/2016; 2011.

Likewise, studies on commercial flight crews of modern aircrafts show similar mechanisms when they have to face incident that are unexpected in relation to prescribed procedures, even though these are considered exhaustive (Aw, Sperandio, 1997; 1998). Among other factors, the time constraint (for example, the time that operators know they reasonably have available) is an important one among the operational adjustments. This is clear in the analysis of welders, whose transcripts show explicitly a subjectification of time constraints. Often, an operator facing a problem does not ignore the existence of several solutions, different operational methods, but he/she chooses the most adequate option to what he/she knows being able to do. Several studies corroborated these results in very different work situations.

Similarly René Amalberti (1996), specialized in large risky systems (aviation, nuclear, etc.) argued that operators continuously manage a compromise between the rigid prescription and what they know they can do in each specific circumstance, and possible errors are just part of the regulation mechanisms of such compromise.

Indeed, only in rare cases the work analysis performed in ergonomics do not take into consideration the important role of operational self-organization as a crucial element of work and work conditions, in other words, the margin of discretion that enterprise Organization (with a capital "O") allows (or does not allow) to operators.

Incidentally, the existence of a significant gap between real and prescribed work is a major classic of ergonomic culture and literature, discussed in particular by Jacques Leplat in many of his contributions (for example: Leplat, 1997). Even in large risky systems, such as aviation, nuclear or process industries, where imposed procedures prescribe the conduct of operators in the majority of circumstances, these prescription leave vague areas in which only experience dictates what is necessary, that is, "shadow areas with problems without a given solution", as Daniel Faïta (2014: 13) rightly writes in his clinical analysis of welders.

However, the ergonomic interpretation of frequent gaps between real and prescribed work is delicate. Are prescriptions incomplete, not precise, too constraining, inefficient, counter-productive, obsolete, or even damaging? The common assertion according to which operators may have good reasons not to respect prescriptions literally explains a naïve tendency by some ergonomists to interpret "all" transgressions to the norms as manifestation of operators' ability and "operational" intelligence, to utilize a term introduced in cognitive ergonomics by Dimitri Ochanine (1978), according to which operativity is a skill of cognitive flexibility that translates into a selective information filter and an adaptive "adjustment" to the situation, in relation to the acquired experience.

If expert workers may have sometimes valid reasons to intelligently move away from prescriptions, because of safety, quality or efficiency, however prescriptions and rules also have justifications, if anything as necessary aids in case of insufficient training or partial competence. For example, there are numerous analysis in which accidents are due to failed respects of prescriptions, while others, on the contrary, show the inadequacy of prescriptions that should not have been respected in a certain circumstance! Also, it would be naïve to believe that operators are always right, as it would be utopian to believe that work is always well designed and organized.

Anyway, it is clear that operators are continuously induced to manage possible conflicts between criteria of external prescriptions and what is suggested by their own experience. In the study of welders, for example, individual experience is capable of filling a certain prescriptive void instead of disobeying prescriptions. Such job experience, which dictates the operational conduct, goes beyond prescriptions. It is obviously subjected, among operators, to a certain variability.

The operator as first actor of work transformation

The second question concerns the ability of workers to be the main actors of work analysis and transformation. The approach of the O&W Program has among its fundamental traits the idea that "the analysis - with its

transformational and re-design consequences - is entirely carried out and managed by the subjects themselves" (Maggi, Rulli, 2012: 20). "Recognizing the centrality of *agents* in the work process, their participation to the design of the process, to its enactment and its carrying out, implies that only these same subjects, and not external researchers, are able to analyze and assess appropriately the work process in which they are involved. Also, since the analysis concerns the organizational choices and their possible alternatives in the development of the process of action, it is inserted into a change by participating to it: the analysis is, at the same time, transformation, intervention, re-design. All this can happen only if the subjects involved in the work process are the protagonists of the analysis itself." (*ibid.*: 8).

The radical expression of this latter sentence is not probably unanimously agreed upon in ergonomics. At least, it deserved to be softened and discussed, as the authors themselves invite to do, as they propose to "ask about the reason that might impede, and on those that might allow, a truly active role taken by the subjects in the analysis" (*ibid.*: 20-21).

What about ergonomics? Workers' participation in the analysis of their work and the prevention actions that concern them is a widely accepted principle in ergonomic practices. Indeed, there are several examples of failures indicating that changes externally imposed by a hierarchy that neglected workers' participation, or sometimes without ex-ante information or proper training, even when they are technically valid, did not have the expected positive effects. It is not rare, by the way, that operators accustomed to the use of mediocre tools do not accept gladly objective better tools which they don't know and oblige them to change their actions. Similar phenomena happen in relation to organizations and instructions. However, to postulate that workers and "only them" should transform their work is at least utopian.

The purpose of ergonomics is to bring scientific knowledge to human work, so that it can be used by those who design and organize work, without prejudice about those in charge of designing and organizing. In this sense, ergonomist are among the "experts of human work" (for the aspect of their

competence). Such competence concerns firstly the analysis, which is different from the know-how about the job object of the analysis. Those possessing the know-how are not necessarily the subject in an ideal position and best equipped to improve their work, as they may lack competence about analysis and design.

On the other side, obviously it is not enough to mobilize competence so that these are transformed into work improvement. Many analysis and evaluations, showing what is wrong and prescribing with should be done to improve, have no practical consequences for enterprises, designers, managers and even for workers[3]. Thus, ergonomics is always looking for the best possible way to an effective action. Different ways coexist.

A classic contribution concerns the publication of research and field interventions results in journals read by designers, in the hope that these put them in practice, sooner or later. Others are active in trying to include ergonomics in the education of engineers, technicians, architects, computer experts, designers and even operators (in particular unionists), hypothesizing that these professionals will utilize daily their ergonomics knowledge at their own level of action. Some ergonomists work directly within a design group: the impact of ergonomics is then obviously immediate, as the ergonomist becomes a designer or co-designer himself, within the limits of his technical competence. His role, in relation to designers, organizers and managers in a broad sense, is typically to "transfer" data on "the man at work" or, in some cases, data generated by concrete analysis on a specific kind of work. Other ergonomists are themselves active engineers, computer technicians, architects, physicians etc. Another way is based on specialized organisms (for example, in France INRS[4] for safety, ANACT[5] for work conditions; CHSCT[6] in enterprises with at least 50 employees, etc.) and occupational medicine for health, which by law have the mission to intervene in work contexts in order to protect workers.

[3] Fortunately, this is not always the case.
[4] National institution for research and safety (for prevention of work accidents and professional diseases).
[5] National agency for the improvement of work conditions.
[6] Committees for hygiene, safety and work conditions.

An intervention modality which has widely proved its effectiveness concerns work groups including operators, utilizers/designers, organizers and ergonomists who jointly act for extended periods.

Do operators want to improve their work? Can they do it? Are they willingly interested to contribute to the improvement of their work? Surely they do and they can in some contexts, in some services or some enterprises, but this is not the most frequent case. We notice that if large unions, at least in France, do not acknowledge quite enough the ergonomic need in their demands, which usually concern more wage increases than the improvement of work conditions, however there are unions participating, at the local level, to analysis and improvements, especially within the CHSCT.

While it should not be doubted that workers and users possess a great wealth of knowledge that can be used to improve work and systems, we need to be aware of the obstacles along the entire pathway of such knowledge, from the "base" to the designers and organizers, in the majority of enterprises. This reflects not only a certain reticence of decision levels to give up part of their power to design and organize. Even when some "experience returns" from the base to the decision levels are explicitly programmed (and they usually are limited to observed malfunctioning signals, incidents o "boxes of innovative ideas"), the impact of such feedback are marginal, even in high risk contexts such as aviation or nuclear, which however support safety as a priority.

The path that separates the final user or the operator from the initial design is complex, from an organizational, financial and cognitive point of view. Intermediate steps are numerous, connections are close, interests are divergent. To climb up such sequence "against the current" is not easy, even if it's theoretically possible. One of the difficulties of the so-called "design" ergonomics concerns, among others, having to face problems along this path.

Besides the fact that operators are not necessarily the best subjects to analyze their work because of their lack of methodological competence and adequate perspective, to design requires in itself a particular organization and competence, different from those related to the operators' know-how. Only in

rare cases future operators or users are clearly defined and known by the designers. *A fortiori*, they do not directly participate to the design process.

In contrast, the fact that in the analysis performed within the O&W Program operators could participate directly to the transformation process, from the analysis to the actual improvement, is certainly exemplary.

Allowed autonomy to the individual action

Many typical aspects of modern work evolution in several enterprises unfortunately do not seem to fully share the idea of allowing more autonomy to workers so that they may change their work and improve it. The list of these unsettling elements is long and not exhaustive: personnel reductions and massive increases of time constraints, workloads and goals, which damage the correct execution of jobs; decrease of job security, which becomes a sort of blackmailing technique to justify unacceptable practices and to negate any work improvement, often against the current job rules; short or temporary contracts which do not allow workers to acquire a good job experience; new hiring of personnel with low level of education and low wages; insufficient contributions allowed to professional training; managers that are distant from having a real knowledge of jobs, etc. The very notion of "job" or "profession" tends to vanish in favor of that of "employment", which is embittered in social, economic and political terms. However, it is not utopian to argue that there are still some operators who love their jobs, they are proud of them, they wish to be able to perform them correctly and to continuously improve their experience.

Also, when an accident happens, the prevention sought by organizers is often a tightening of prescriptions rather than an increase of autonomy. This doesn't happen only in enterprises. In road traffic, for example, when they respond to serious accidents public authorities prefer to generate bans that limit the autonomy of drivers – which are not always cautious, to be honest – rather than identifying an inappropriate structure and find a remedy.

Interdisciplinary synergies

The third issue concerns the possible collaborations between the approach of the O&W Program and other approaches to work analysis, including ergonomics. As no science has sufficient competence to analyze by itself the complexity of human work, interdisciplinary synergies are necessary.

On the field, ergonomic interventions are very often associate to those of other disciplines, in particular the sciences of engineering, organization or architecture, and of course occupational medicine which operates together with ergonomics. However, such desirable inter-disciplinarity is often slowed down by the fact that the tasks of field interventions imposed by enterprises or administration are narrow, as their main concern is to minimize the cost or the duration. Even it is a good ergonomic practice to "re-formulate the initial question", this is often too limiting. Too narrow, too pin-pointed, too delimited to a specific diagnostic function sometimes performed [7], the ergonomic intervention does not have the possibility to perform an in depth activity, and even less an activity controlled by the workers themselves. Such situations, always deplored by ergonomists, can hardly bring about a joint action of several specialists which effectively cooperate. Thus, one has to appreciate the rare and exemplary bravery of the interdisciplinary commitment of the O&W Program, which was able to overcome such obstacles and keep analyzing for many years, with the necessary detachment, the evolution of work after the interventions.

Methodological contributions

Among the convergences with ergonomics that we already examined, we find the sophisticated analysis of the levels of the individual operational organization and of the work areas not precisely defined by the prescriptions. While this is not part of the of research and intervention subjects of ergonomics, the approach of the O&W Program provides a theoretical dimension that may

[7] We refer to the "short diagnosis" of the ANACT network, which lasts five days.

enrich the typical ergonomic approach, as well as an significant competence of organizational analysis.

The methodology used in the O&W Program, however quite close to the one that ergonomists would employ in this kind of intervention, may enrich the ergonomic "toolbox", especially the "method of organizational congruences". This method, utilized in the analysis, includes discussions with the operators, direct observations, comparisons with filmed documents, etc., then completed with a biomedical analysis of safety and health conditions. The method is, at the same time, descriptive, analytical and evaluative of the work process, and is related to a work transformation governed by the workers themselves. These are invited to describe their own work by distinguishing the analytical components of the process: the expected outcomes, the actions utilized to achieve them, the technical qualification of action, and the regulation of the whole. The use of a methodology composed by several techniques of different data gathering and several analysis modalities of such data is typically what ergonomics recommends. A strong point of the O&W Program, worthwhile underlining, is the cooperation with the operators.

It may be notices that the work of welders has been object of a parallel analysis by Daniel Faïta (2014), performed with a cross self-confrontation. Faïta and Maggi (2007) have discussed the complementarity and the synergy of their methods. Self-confrontation is a very fruitful method for work analysis, and it is part of the classic "toolbox" of ergonomists, but it has both the virtues and the problems inherent to any method for collection transcriptions, even crossed ones. Its results are then strengthened if compared with the ones obtained with other methods. It is indeed rare to find studies in which the same work situation – in this case, the work of welders – has been analyzed by different authors utilizing different methods, which allows an enlightening comparison of results. We can see here an actual realization of the pluri-disciplinary openness to complementary methodologies by the O&W Program.

Conclusion: teachings for ergonomics

We described several lines of convergence between the O&W Program and ergonomics, and also some discussion points, particularly in relation to the role of operators, designers and "experts" of work in the process of analysis, design and improvement. Analysis and design require specific know-hows, as they are specific jobs. Operators obviously have very rich knowledge, know-how and experience about their work, but these do not include necessarily the competence to perform a systematic analysis of it, as it implies a specific methodological and scientific approach. Similarly, operators are not always the most suited subjects to design their own "work system" or to improve it, even if any concrete analysis and improvement approach requires their active participation, as they have essential information. In this respect, each work situation is specific: in some cases, operators turn out to be self-designers or, at least, highly competent co-designers, but this is not a general rule. At least, each operator always brings knowledge about work derived from his/her own personal experience, which is irreplaceable. Finally, the analyst has to find a good recipe to utilize in the best possible way that share of competence about innovation possessed by operators in various degrees.

From this research, which generated changes that improved work, organization, documentation and training, ergonomists will be able to acquire especially the theorization that defines the general approach and methodology of the organizational analysis, in order to enrich their approach to analysis and intervention. Reciprocally, ergonomics can offer the resources of its analysis methods.

Organizational action, which is at the center of the O&W Program, is a subject that interests ergonomics directly. The degree of autonomy that work organizations allow or don't allow to workers, according to their experience, to organize, regulate and execute effectively their work, faces the prescriptions that normally are imposed, especially in risky contexts. This research subject is complex enough to require an interdisciplinary analysis.

Performed with the direct participation of operators, analysis and actual improvement actions have taken roots in their temporal duration. It is an essential characteristic which is worthwhile outlining, a significant credit to the O&W Program.

From the point of view of ergonomics and work psychodynamics

***Laerte Idal Sznelwar**, Universidade de São Paulo*

Introduction

The purpose of this text is to discuss the proposals of the Interdisciplinary Research Program "Organization and Well-being". The initial reflection is to place the point of view sustained here in relation to labour sciences, where our professional work is located, which we discussed in another contribution (Sznelwar, 2013).

Referring to the *activity based ergonomics* (Wisner, 1971/1995a: 47-56; 1995b: 1-20) and the *psychodynamics of work* (PDW) (Dejours, 1985; 2011; 2012), we tried to develop the thesis that every subject is the protagonist of his work and that work is protagonist in production. The search for a dialogue with the *theory of organizational action* (TOA) (Maggi, 1984/1990; 2003/2016; 2011), and the practice that derives from the "Organization and Well-being" (O&W) Research Program can be very interesting and useful.

What is the organization?

The statement that "work organization" is not a given, a structured fact, induces a very important reflection. Considering the fact that every organization is the result of process of actions and decisions, TOA agrees with the proposition that considers institutions as the outcome of living work; i.e. production and work result from what people do, how they act, even if a connection with the functioning of machinery is necessary to obtain the desired results. We believe, from the point of view of the centrality of work for production, that in principle, humans use machines in order to achieve their goals. Without excluding, of course, the importance of power distribution among people and the fact that workers act in scenarios where there are constraints, and that action is also influenced by the actions of others, coated by

power relations. The relationship between autonomy and heteronomy is crucial in this debate, as human actions are always built in a dynamic process resulting from what refers to the individual and what is related to the relationships with others. However, even if we distinguish between autonomy and heteronomy, there is not a boundary established to analyse actions by reference to one or another, especially because in the construction of the professionalism of the subjects, the incorporation of professional rules, linking tradition and ways of doing built by experience, integrate the actions of people.

Based on these assumptions, we also refer to the "theory of complexity" of Edgar Morin (1990: 87-114), which proposes a dynamic vision of the organizations and the idea of organization including the living and human actions; there would be no organizational structures but organizations that are the fruit of the work of humans. Based on the principles of entropy, Morin says that any system tends to disorder and that their regulations would be used to search for differentiated levels of order, in relation to a constant drive to disorder. Thus, concerning the organization of work, there would always be a human action trying to cope with this disorder to achieve the objectives, both those defined by the hierarchy and those redefined by workers.

The term organization is polysemic, in the sense that there are appropriations more or less explicit in the various fields that study the work. In the case of ergonomics, the reference to the organization is always present, for it is very difficult to understand what work actually means without references to how and why the tasks are divided in work situations. The same can be said about time related to production. It is important in ergonomics to have some knowledge related to the organization of production and work, as well as production processes. This is a preparation to help build a dialogue with other actors in the production system, professional and workers engaged in the focussed operations.

In the case of psychodynamics of work, some issues are similar. The purpose is not to transform a "clinician of work" into a specialist on organizational theories. However the issue of working is in direct debate with

the issues of work organization, as workers have to face the division of tasks, the ways they are evaluated, the scope for cooperation, among others. The aim is to understand how subjects experience their work and, in order to help change work situations, work must be discussed in relation to the domain of constraints, those who decide, and expand the power to act of subjects and collectives.

One of the great contributions of these "sciences of work" is to focus the discussion on work organization and the consequences of different choices; it's important to emphasize within the organizations the consequences for workers, for the collective and for the development of culture of the strategic decisions. The concrete proposals of the O&W Program are aimed at reducing the traditional gap between those who decide and those who perform the tasks. One question is related to the fact that if it's possible to establish an approach based on the presuppositions of the TOA in any organization or if instead this is more suitable for institutions with a more democratic tradition, where there is an effective power sharing. We feel that the starting assumption is a point of view that builds a way of understanding the organization, not a direct reference to the degree of democracy or participation.

Work

In ergonomics there is an important distinction between "work activities" and "activities not related to work", as constraints are different and the specific construction of people actions have distinct intentions. When defining work activities, Guerin *et al.* (1997) gives an example of this distinction. The developments of activities that have the same base, as some domestic jobs, like care services, are not the same if there is a family relationship or if it is a contract of employment. Although some tools utilized are the same, it is not the same activity, especially because the commitment of the subjects is not the same, as well as power relations.

A differentiated vision about what "work" has to be built and contributions of different areas with their different contributions and points of

view are to be grasped. In the analysis of a medical service led by Maggi and Rulli (2012) there is a political construction that, as it unfolds over a long period of time, must have significantly altered the power relations in institution, at least regionally. The conditions concerning the engagement of workers in the analysis and transformation processes show a significant political maturation, a space for collective deliberations has been built, and what workers have proposed is to be considered to guide the necessary changes. This dynamic process must have required a lot of debate and a major institutional change, different from what is very common in Brazil, where a functionalist vision of business in companies still dominates, and where a points of view anchored on top-down power relationship are still prevalent, where orders are given to workers, considered as subordinates.

The contributions of the PDW on concepts of work pose the questions in a distinct way. Although the main goal of this approach is to allow the subjects to take ownership of work by broadening their actions, focusing on the opportunities for cooperation, the issue of work has also connotations of working on itself, about the possibilities of reflection and construction of meaning based on values shared in the professions, and, more broadly, on issues related to culture.

Task and activity: a critical view

A major critique proposed by the TOA concerning the concept of task, seen by some, especially if we consider the more traditional interpretations, as a rigid "thing", monolithic and unchanging over time. This point of view, considered by ergonomists from the start to criticize the legacies of Taylorism, is liable for the idea that workers should strictly observe the procedures, as proposed by the scientific organization of work (Marx, 2010). Thus being, work would simply be to execute the prescribed. Ergonomics ruled from its origins in opposition to this view, but the idea of the task as a given, as something established, was part of ideas spread by different authors. An evolution is already present in the discussion of "prescribed task" and "real task" (Guerin *et*

al., 1997) and again in the idea of apprehension and redefinition of tasks (Falzon, 2007). The universe of tasks concerns the objectives, available means, proposed scenarios, the requirements of production and quality, as well as means to evaluate performance of individual workers engaged in the "execution". The idea of tasks as something static would have no meaning, as theoretical bases of ergonomics include a dynamic point of view and, even considering the objectives are fixed in an heteronomous perspective, as well as means and tools made available, it would not make sense to consider tasks outside the dynamic actions of subjects.

Moreover, the particular design of tasks has evolved throughout time. For example, the "socio-technical school" (Marx, 2010) offers a minimum prescription possible, distancing itself from the rigidity of traditional schools of administration. This would be a change in the field of constraints, a considerable increase of the discretionary power of the subjects. In any case, it is important to emphasize that the knowledge of performed work by people is essential and the contribution of ergonomics on this point is fundamental. What people actually do cannot remain unnoticed and restricted to the privacy of each one: the experience must be shared.

The concept of task is being relativized throughout the evolution of knowledge on work itself, showing that rigidity would be an illusion, because it would never be possible to simply implement the requirements in the reality of production. In addition, we cannot forget that much of what is at stake in heteronomy implies the division of power and a perspective according to which there would be those who know and decide on one side and on the other, those just executing, which unfortunately is still dominant in organizations. Among the basic concepts of the O&W Program subjects' knowledge, skills and abilities to decide on what they do and what they have to do is central. It is always important to understand the possible existing modulations and dynamics that develop related to accessible information about work and production, as well as the spectrum of decision in the scope of different workers, considering the positions among the hierarchy.

The question of the relationship between autonomy and heteronomy is also central; especially by highlighting the discretionary power to act that workers have in their jobs. In ergonomics, some authors, including Hubault (2011), discuss this report by emphasizing the specificities of service relationships where it is not only a relationship of subordination with the hierarchy, but also between people, that somehow are present and engaged in production scenarios, like clients.

Workers' activities would explain their commitment to achieve the objectives assigned to them in a specific production scenario. Note that the idea of task, in itself, contains a large part of heteronomy and that what is done should be the realization of what was expected in a planned manner, by a prescription defining the operational procedures. It is known that studies and researches in ergonomics show that this never happens, because it is not possible to foresee everything in advance and that workers do not perform the same activity all the time, because their own conditions are constantly changing.

The history of the development of an activities' centred approach in ergonomics is related to the emphasis about the differences between task and activity. This distinction has been very important for the development of o a point of view, at least at that time, against hegemonic ideas in organizational sciences. Discovering that it is not possible to foresee everything and control everything is essential to escape the trap of considering that work, and consequently workers should be put in a cage, in a reifying process. This distinction is crucial to recognize the strategic importance of workers' intelligence to production, against the current assumptions considering work as a single activity of execution. However - as is common in Brazil – it's important to not confuse the distinction between task and activity with the distinction between prescribed and real. The task is also part of the real, once the different aspects that modulate the activity and has a precedent relationship between them are there.

The contributions of the PDW to the debate on the issue of prescribed and real, with strong inspiration to the findings of the ergonomics, ask questions that are also relevant to the debate of work organisation. For Dejours (2002), it would also be important to highlight that work organization, considered in terms of the division of men and women at work, can be seen as dynamic where cooperation and coordination between actors are present and cannot be prescribed; it would be a construction made by the actors in production, taking into account the differences on power and collective organization capabilities. One of the examples discussed in the PDW is precisely the "zeal", what people do at work in order to achieve production targets. The "work to rule", known in Brazil as "operation-standard", i.e., work only in the prescribed procedure, results in bankruptcy production. One of the questions proposed by PDW (Dejours, 2012) is precisely not to consider production only from an angle of efficiency and effectiveness based on a single strategic-instrumental rationality, without putting in the debate professional values as well as ethical-moral issues, i.e. to highlight the ethics of doing and the political importance of work.

On cognition, body, health

Another comment on the issues of work: it is important to distinguish the "notion of activity" from "functioning", regarding the physiological and cognitive processes. The activity is an expression of different processes, not the process itself, the fact that we cannot observe what is happening inside the body; what is possible to obtain are physiological indicators that indirectly indicate some degree of "functioning" of the body. The same can be said about the cognitive processes: we have indirect access to what is happening in the central and peripheral nervous system, it possible to have access partially through modes of expression emerging from the body, that is, the results of these processes. However, it is clear by now that existing knowledge is not a black box, as if we continue to base psychology on behavioural ideas, an approach where it is of no interest what happens in people's thought, and

where focus is on gestures and postures. To access what subjects think, how they symbolize objects, how they call and give meaning to what they do, is fundamental to understand activities; then it is not a question of cognitive functioning, but how a subject has a more or less conscious intention, relationship to others and is situated historically and geographically.

Issues related to health and the risk of occupational injury are present in the approach proposed by the Program O&W, but the scientific basis befall a medical and epidemiological point of view, where the main goal would be primary prevention, i.e. to reduce or even eliminate risks. The question of primary prevention can be treated in relation to the concept of health, considering that there is no consensus on its meaning. The specific concept of health as a process would appear in the proposal of the English concept of well-being which, differently than for Latin languages, gives a sense of continuity through the use of the gerund. Latin languages give a static idea of being (*bem estar, benessere, bien-être*). This, somehow, shifts away Maggi and Rulli's proposal from those expressed by some medical approaches that treat health as absence of disease, and focus exclusively on epidemiological surveillance to detect as early as possible anomalies relative to a state of "normality". The issue of health would not be frozen in the positivist relationship between constraints and their consequences, but would especially be founded on a dynamic perspective where the possibilities of action would be guaranteed.

There are still open questions, such as, what is well-being? How can we consider it? It would be a matter related to the possibility of acting in the world, health would be in the field of power to act by the subject, to respect his work, as well as other aspects of their personal life, if work can be separated from the rest of life? Would be a better proposal the one by Maggi, that is, to distinguish without separating? Somehow, this concept could be put in discussion in the perspective of relationship between suffering and pleasure, proposed by the PDW (Dejours, 2011), whereas the issue is the dynamics of the construction of health, and especially the question of how that is done is lived by each one and by others.

Analysis and action based on these different approaches

The role of researchers or professionals dealing with working questions is central in these approaches. The Program O&W proposes the creation of "devices" involving acting subjects in order to exchange experiences, discuss, negotiate and agree on what and how to do. The presence of a person external to the work group can be a facilitator, in the position of someone who helps lead the discussion by providing specific knowledge to help the reflections; but we can only surmise how that happens once every situation is a singular collective construction and depends on the wishes and possibilities of the social actors involved in the production to reflect together and promote discussions and, especially, to transform situations.

Being the trend a growing enrichment, constant enlargement of discretionary power in sight of a process of emancipation of the subjects and the collective, the final goal would be to not require an external person to achieve it. However, it is not easy to avoid the presence of intervening researchers if in the production systems we do not have an agenda to devote time to common reflection activities that can also promote a dynamics to growth power to act of the working community.

Anyhow, as clearly shown in the analysis of Maggi and Rulli (2012) on a health service, it is not the case of isolated teams. What happens in the devices is always related to other instances of action and decision, in the case of differentiated instances of power, with which it's important to discuss, defend views and establish compromises.

It is a distinct positioning from a more traditional approach in ergonomics, especially, as already highlighted, when the ergonomist considers himself or is considered as an expert and has the capabilities of finding a diagnose about the problems and propose solutions by himself. Considering that a professional must exercise his capacities to be useful to the organization and, above all, to others, it is important that, in this case, the ergonomist should be able to propose good questions and build in cooperation with other relevant

issues. Thus, it would also have a facilitating role, but not only, he would be a stakeholder in the construction process of building problems and the issues for understanding then, and also to cooperate in building solution scenarios.

In the case of the ergonomics there are some nuances that must be considered. In our opinion, in agreement with Hubault (2006) ergonomics' interventions place the ergonomist in a position in which he should not be seen as an expert when seeking to understand what in fact people do at work. In principle, it does not have the same knowledge of other corporate stakeholders, especially those directly involved in the focussed task. The ergonomist would rank as one who works for the construction of an interlocution not as an expert with more relevant knowledge that would be simply applied to improve work.

The temptation to master and control everything is a risk, however, it's always present, so the ergonomist can perform by himself a diagnosis of the situation, without the commitment of workers. Then, observing work activities and questioning workers about what they do, their difficulties and the consequences of their activity, it does not necessarily explicitly engage people, as proposed by the TOA and the Program O&W. The diagnosis remains as a sole responsibility of the ergonomist. Transformations would be of exclusive responsibility of some professionals who are able to propose changes in work, maintaining a posture that the design and the project would be activities for others and not by the workers directly involved in the analysed operations.

Different researchers engaged in ergonomics are positioned in a way to keep a significant role conducting an intervention, based on knowledge that can be useful to animate the processes and also on knowledge related to the work itself, putting in perspective the possibility of joint construction with social authors, specifically with workers directly involved, transformation processes, development and construction of practices (Falzon, 2013; Bourgeois, Hubault, 2013). Discussions proposed by authors like Béguin (2007) and Daniellou (2007) about the role of ergonomics in the construction of transformation is central to understand the dilemmas and difficulties to overcome, and reinforce the risks to ergonomist of positioning himself as an expert. However - and especially if

we consider the current situation of Brazil - there is a strong tendency to consider ergonomics as experts who have an advice to give about "occupational hazards" and not as actors that would promote changes (even a tendency to act in litigation processes and to provide advice on compliance about legal standards - a role of ergonomists as "forensic" agents)

According to the proposals of the Program O&W, workers would have a central role in the analysis and construction of solutions. The role of "other professionals" such as designers, engineers or managers, would boost this process and provide technical assistance for that as the situation encountered at the beginning as well as the transformations can be analysed. It is not possible to disregard the knowledge of different areas so that the work processes can be analysed and transformation projects can be developed and implemented.

However, presuppositions of the "classical school of organization" (Zilbovicius, Fleury, 1997), are still present and have enough power to direct and conduct actions of project managers and management. The idea that the worker must fully realize the procedures is mainly evocated when the proposal is to hold him responsible for a failure or because he's done something that did not appear satisfactory in producing of a good or a service, either because there was an incident or accident. The commitment of workers to do their work is defined as his diligence.

In this perspective, we must highlight the issue of the original request for the ergonomist. It would not make sense to propose actions in ergonomics without a willingness on the part of actors in the company to initiate a process that challenges organizational choices that are at the origin of quality and productivity problems, as well as health issues related to work. Questions related to the possibilities for change are indebted to the positioning of actors in the company and their views in relation to work and to the origins of the problems focused at the initial demand made for the ergonomist. Ergonomic work analysis is an approach that proposes an in-depth instruction regarding the demand, so its origins, actors that desire understand and transform, and the development of points of views that will be in debate. In relation to the

proposals of the Program O&W, it would be interesting to discuss how demands received to develop interventions are analysed, taking into account the possibilities of involvement of different workers, on different hierarchical levels and also concerning an existing dispositive or to be build, in order to institute debates regarding work constraints and the possible changes.

The question of what would actually are the different modalities of "action" is very relevant to the dialogue between the approaches. There is a fundamental question about what an action in the world means: not only the workers act in the world, but other professionals engaged in these different fields act inspired by assumptions incorporated, also act facing the *polis*; i.e. what each one does is a political action, especially if there is a goal of transformation. In this sense a fundamental question arises, if we reflect about the different rationalities that inspire any action. We could discuss the various drivers for the development of actions that are modulated under the aegis of different rationalities: "pathic", axiological and strategic-instrumental. Thus, beyond what the particular issues of each one could be understood from the perspective of psychoanalytic anthropology (the case of PDW) as one of the engines of the action, it should be considered the socially shared values and objectives. To debate different points of view, taking as a basis different rationalities could be useful in understanding and distinguishing the contributions from different disciplines to knowledge of human work, for its transformation and for the development of culture.

The protagonist

In our opinion, work is central in people's lives. The definition of the person, the specific issue of subjectivity has not been present throughout the history of ergonomics. This question emerged more recently both because of the increasing mental disorders on work, and to solicit other areas of work sciences such as PDW and the *clinic of activity* (Clot, 2008).

How can the "subject" who acts and decides be understood? What are the epistemological bases that define him? Would he be someone with full

awareness of his actions? Would he be a social subject constructed in power relations and the possibilities of action he meets and conquered? What kind of body would he have? Is him someone who, for himself, is always present at the centre of the scene of his life? We believe that a debate on the definition of what means people/subject can be very interesting to better situate the TOA.

The acting subject, in the case of PDW, is a subject that researches, based on his needs, his desires, which is not fully aware of, and which exists not only in himself, as its existence depends on others in the direction of his experience and that his self-existence is related and depends on the existence of others. According to the traditions of psychoanalytic anthropology, this is a subject endowed with a psychic unconscious having a fundamental role in the accomplishment of his actions. Regarding the psychodynamics of work, there would be a significant component linked to the ethical and moral issues, especially when the proposals in this area include a distinction between *poiesis* and *praxis*. Work would not, therefore, be an activity aimed at the production of something or a service, but it would be mainly an action in the world, yet still having an impact on the *polis*. This aspect would include axiological questions, since this concerns values that are assigned to different professions and different types of work, and there would be aspects related to internal conflicts of the subjects themselves, how those balance these most selfish desires with the question of the relationship with others.

The issue related to the collective of work also arises from the relationship with others. For the psychodynamics of work there would not be a solipsistic position, isolated from others, especially because the constitution of the person/subject depends on others. The relation with others is essential not only for survival, but it is constitutive for the construction of ones' identity. With specific regard to work, it occurs always in relation with others. Working is a challenge for mental health, especially because it is the possibility for the subject to flourish and continue its way in search of recognition, in a first instance, and at a term, a way for emancipation. It is important to emphasize that this process of emancipation was not an issue restricted to the individual, it

also depends on the relation with others. It is for these reasons that the existence of true collective in work is central not only for mental health, but also for expanding opportunities to engage transformative and political actions.

Conclusion

Finally, to conclude, we consider this text as a start, as a proposal for a dialogue in order to better understand how we stand face to this fundamental question of human existence such as work.

From the point of view of work sociology

Jens Thoemmes, *CNRS, Université de Toulouse Jean-Jaurès*

Introduction

This contribution aims to discuss from a sociological point of view the scope, value and limitations of the "Organization and Well-being" Research Program's approach. Given our interest in this Program's approach we will try first to present the most salient features and then make out the differences that exist with our approach. Basically, the approach of the O&W Program constitutes a rich and heuristic point of view. It is concerned with the work process. The approach distinguishes a) technical actions independently of operators, b) their accomplishments - therefore with the operators and the characteristics of the situation (space, time, modes and values), c) technical knowledge mobilized into action related to the object, the means and the process. This analytical distinction allows a description of the process which then leads to an interpretation of the organizational constraint, the choices that preceded it and the possibility of transformation of the work process with the goal of improving the well-being of workers.

To develop our reading of this approach we would first go over some of its features: distinction description/interpretation, work as a process of action and transformation, "the worker" at the center of such approach.

Then we will refer specifically to its theoretical framework in order to show the foundation of the approach and to expose what seems questionable, namely the way of conceiving interdisciplinarity.

Finally, we end our reading by returning to the subject's autonomy, a broader debate that can be submitted for discussion with another vision of this concept in order to clarify its status in the approach presented here.

The elements of a research approach

The approach is summed up in its title: it is firstly analyzing organizational dynamics, here called "organization" in an "interdisciplinary" way and, secondly, to enable greater welfare of workers, the "well-being". The approach is practical in this double sense: to describe an observed reality and to promote better working conditions. The process is finalized with clearly stated objectives. For each research it offers a detailed protocol, methodical and multidimensional. In order to understand better the implementation of this approach, several elements must be underlined.

The first is the strict distinction between a description of the observed reality and the interpretation of the work situation. These two levels do not mix. This distinction allows for example other researchers, approaches or disciplines, to accept the description of a situation, while challenging the proposed interpretation.

The second element of the approach concerns the principle according to which work is understood as a process and a series of tasks that are differentiated according to the phases of this process. Take the case of research on the welding activity (Maggi, Rulli, 2014). For each of the welding work phases the description distinguishes: a) the expected result of the phase, for example the preparation of means for welding, b) technical actions, c) the performance of the actions by one or more operators, d) technical knowledge mobilized during this phase. The process continues with the interpretation of the description. At the heart of this other way of presenting the same stage of the work process, the researchers would characterize organizational constraints which appear in the analysis. Here are successively addressed the possible consequences in terms of inefficiency relative to the desired result, such as factors slowing the preparation of means for welding, but also the risks and damage to operators. The issue of health appears in the center of interest and interpretation. Therefore, indications for the improvement of working conditions, health and safety are made. In all phases, the same activity of

description and interpretation is performed, thereby producing a detailed analysis in order to find the levers for action on the "well-being".

The third element of the approach is to associate the workers by giving them a place of "subject" in the envisaged process, not as an observation of the work of others, but as a transformation of the earlier work process to which the research contributes. The approach is seen as a transformation of the reality with the "workers" integrated to the point that "the analysis – with its transformational and re-design consequences – is entirely carried out and managed by the subjects themselves" (Maggi, Rulli, 2012 : 20).

These three elements, distinction between description and interpretation, phases of a same process and the integration of the subjects studied in the approach already indicate the characteristics of an organizational analysis that deviates from many other approaches used in the social sciences. The so called "method of organizational congruences" (MOC) invites subjects to describe their work by distinguishing the analytical components of the process: the desired results, the actions taken to achieve goals, the technical qualification of actions, and the regulation of all elements.

In order to explain the ways of seeing social reality, we would like to highlight briefly some theoretical foundations of this approach. This will also allow us to address another element of the approach we have omitted to mention: "interdisciplinarity".

Theory and methods

The theory of organizational action (TOA, Maggi, 2003/2016) is based on epistemological characteristics that may be displayed briefly. Work is, as we mentioned, a "process" that is of the order of "social action". The reference to Max Weber (*Soziales Handeln*) is fundamental here (Weber, 1921/1980). The subject acts according to his sense-meaning which is oriented by the act of another. The organization then refers to "the *regulatory aspect* of the process of social action" (Maggi, Rulli, 2012: 6), to the constraints that it exerts on the

subjects. But *acting subjects* are central to the process (design, implementation) and organizational choices.

The focus on "well-being" of the TOA refers to a humanist tradition. The "interest" is clearly located around health and includes the normative act of the researcher. We can call this a non positivist theory. Furthermore, the TOA is part of the legacy of sociology of work, especially that of Georges Friedmann, without sharing his pessimism nor his Marxist theory (Friedmann, 1956/1963). The well-being concerned is not that of a class, but of a potential transformation of the organization, for example resulting from a research command from business favoring the work of workers who are part of the methodological device. In this sense well-being is a "pragmatic" goal that ultimately could serve both sides (labor and capital).

The focus is mainly on the organizational choice of work, including Taylorism that is not regarded as a postulate, but as an organizational constraint that can change. It's one of the differences with an alternative experience of Ivar Oddone in occupational psychology and renewed forms of the "worker model of knowledge" that has sought to transform largely relations of production incorporating also the subject in the research. The method called "doppelganger" is fundamentally different from the approach of the O&W Program: "If there was someone exactly like you from a physical point of view, what would you tell him about how to behave in the factory in relation to the task, to the colleagues, to the company's hierarchy, to the union (or other workers' organizations?" (Oddone *et al.*, 1977: 127)[1].

The experience of the subject is passed here by the advice given to the investigator, while the O&W approach replaces this method to avoid the pitfalls of subjectivism and objectivism. Through the prism of well-being it confronts organizational choices in a process of change led by the workers. The

[1] "Se ci fosse un'altra persona perfettamente uguale a te dal punto di vista fisico, come gli diresti di comportarsi in fabbrica rispetto alla mansione, ai compagni di lavoro, alla gerarchia aziendale, all'organizzazione sindacale (o ad altre organizzazioni dei lavoratori)?" (translated by us).

expressions of autonomy, constraint and regulation are used to enter the objective and subjective characteristics of the process and thus to identify the organization in order to place the subject in the situation of transformation.

The other difference with the O&W approach is the epistemological position around the doppelganger method that seeks to combine cognitive analysis, subjectivist, causal, etc. The TOA judges this combined position "fragile". More fundamentally, the persistence of functionalism related to an insufficient questioning of Taylorism is criticized (Maggi, 2010a).

A final important element of the O&W approach concerns the concept of interdisciplinary research that we would like to discuss. We have never claimed that position and we do not have the experience to evaluate the substance of the disciplinary status of this approach. But we would like to generate, through a few remarks, a debate on that notion. We can only agree to the posture of cooperation between disciplines of the TOA but we wish that their scope was clarified.

In our first reading, interdisciplinarity requires exchange of analysis, methods and disciplines, it presupposes a transformation of the relationship between analysis. The O&W approach seems actually closer to multidisciplinary research where each discipline retains its specific concepts and methods. In our second reading, we could then go further, look at the theory and argue that the latter is not interdisciplinary, but *un-disciplined,* that is to say based on a distancing of "discipline".

We offer three additional meaning to that concept for the approach of the O&W Program: rejection of the discipline as a relevant part of the analysis, the transgression of disciplinary boundaries without replacing them by a new field and the replacement of discipline or of a perimeter of disciplines by the uniqueness of the theoretical framework.

First, the TOA has multiple inputs: ergonomics, law, sociology, psychology, language science, organization theory, economics, history, etc. But the TOA does not seem to embrace the idea of capitalization of knowledge within a discipline and for good reason. The dominant paradigms within

disciplines, and the "normal" science, are rather rejected, because they are seen as a deterrent to the production of knowledge. In this "disciplinary" perspective a discussion among representatives or "spokesmen" of them seems almost impossible or at least undesirable.

Second, always against the interdisciplinary approach, the TOA is not pursuing the Weberian or Marxist idea of a general social science because this fact would exclude other important areas for research such as medicine or biology. The underlying project, but that remains to be determined, would be more that of a general science of work, but strictly focused on its purpose.

Thirdly, and more fundamentally, what matters to the TOA is the theoretical orientation, regardless of discipline. It is the commensurability of theoretical frameworks which is the criterion of collaboration and not the presence of several disciplines. The latter is desirable, but only to the extent that the theories (and hence the methods) can be considered as "close" from an epistemological perspective. One could say that the TOA is not an (attempted) interdisciplinary theory, but "undisciplined", and pushing a bit too far our argument, it shares neither its methods nor its theory and favours basically the disappearance of disciplines. We underline here a form of incoherence of the "inter-disciplinary" posture.

Back to the subject's autonomy

The approach and its theory cannot be observed from the perspective of Sociology, but only from a sociological point of view. In this perspective we present an unrepresentative special interrogation of a discipline that knows multiple approaches, including within the sociology of work. We share many views with the TOA, particularly his interest in the organization as a process, empirical research, avoiding the pitfall of objectivism and subjectivism, structures and actions, etc. The common interest for theories of social regulation (Reynaud, 1979) and organizational work (Terssac, 2011) reinforces this proximity.

One of the issues that should be discussed concerns the autonomy of the subject in the proposed approach. This concept covers indeed multiple meanings for the only area of work (Terssac, 1992; 2012). It gave rise to an extensive debate on the definition that we will be unable to return. O&W's approach differentiates fundamentally *discretion* of the subject (various preset options, or without prescriptions) and *autonomy* (the ability to produce one's own rules). "Discretion indicates areas of action in a controlled process where the acting operator has to decide and choose in a dependency framework" (Maggi, 2003/2016: Livre II, 16; 45; and about the subject the dedicated third chapter, namely: 90-101). Autonomy overcomes the dependency framework. In the TOA each individual is capable of producing its own rules.

Reynaud (1988) sees social regulation as the result of a confrontation (compromise) between control and autonomy. In this theory the control is strategic and aims to influence from outside on the performers and not just by prescriptions, by regulations or by the margins given to operators: the claim of control is wider and affirmed. Inversely autonomy is strategic: the performers seek to assert their position. It corresponds to a project that grows in a power relationship. For this reason we also believe that despite the heuristic nature of the approach O&W regarding health, and that's what counts in the end, the approach remains locked in a relationship between what is prescribed and real life. "Autonomy provides the solution in cases of programme's inadequacy […] discretion refers to parts of a programme that are not subject to procedures" (De la Garza *et al.*, 2011: 7-8). Autonomy and discretion are "functional" in relation to a pre-established agenda.

For us, it is not useful to distinguish between discretion (false autonomy) and (real) autonomy, since a definition of the action of the performers may be uncertain (is it a choice among proposed options or a self-generated rule?). Then this analytical distinction is subject to validation or challenge by the regulatory process itself. Discretionary choices can turn within the process into an autonomous rule and vice versa.

Our conception of autonomy is less demanding on its content than on its aim. The use of discretion may be "autonomous" if it fits against the control regulation. The option chosen by the worker may (under certain conditions) not be suitable for the hierarchy. If one can choose formally to take 4 weeks annual leave all of a sudden, the employer may be afraid at some point to have difficulties to meet the demands of customers. Maintaining that allowed choice of a long vacation by the worker may be interpreted under certain conditions as an autonomous action. Moreover, a prescription can be perfectly executed, but facing the aim of the control regulation. Applying a rule to the letter may be a sign and expression of a challenge to control. This type of autonomy is as real as the creation of one's own rules. So the meeting between autonomy and control is inherently uncertain in its form and in its results. The creation and use of the rules are subject to the power relationship between autonomy and control. We see that autonomy in these cases is not always the ability to produce one's own rules, but sometimes it is executing according to the rules, including those dedicated to control, in order to assert power. In other words, autonomy is not necessarily a characteristic of the individual, or a functional necessity that could define the substance previously, but only a projected will to oppose the claims of control. This definition is intended to enlarge the scope of what can be considered as autonomy unlike a reading that is too focused on the subject of autonomy, which nonetheless remains important. To harden the line of our position: autonomy in this context is relational and not substantial. It does not refer necessarily to prior capacity or to register tasks or actions that would be by definition "autonomous" nor to freedom from a dependency framework. For us, overcoming the dependency framework of work and business, or just the prescription as is the case for the TOA, is not a condition for autonomy. Instead, autonomy is built in a dependency framework that can be exceeded in some cases. In return the dependency framework needs autonomy to assert power and to rebuild.

We can finally ask the question concerning the transformation of the labor process, if the autonomy of the subject needs a research device, for

example that of the O&W Program to express themselves, to be guided or to transform the system. One might distinguish here the "spontaneous" autonomy of the subject, and the "assisted" autonomy by the O&W Program's approach. Despite all the space that the TOA gives the subject in relation to other theories, one can examine this dependence of the subject from the researcher in the effective regulation of the process, in learning and knowledge production.

Then, the power relationship from our perspective is not between individuals, but "that which exists between a group and those who want to adjust from outside" (Reynaud, 1988: 11). We know that the TOA provides the individual the same place in its theory than the group. For our part, we reserve the term autonomy to a collective strategy in the world of work. Our research objects (working time, negotiations) showed us that we seldom assert alone our own autonomy in work and in fact there are at least a core of a few people carrying an autonomous project (Thoemmes, 2015). This choice is not only theoretical, but also heuristic. It seems to us that to qualify the autonomy of a sole person and to link it by aggregation to a group makes it more difficult to discover the collective strategies and observe their peculiarity, social links, values and ways of action that form around. For us, autonomy is therefore immediately collective, thus freeing the concept of microeconomic theory and utilitarianism which defines the collective well-being as the aggregation of individual welfare. This latter view continues to exert considerable influence in the social sciences in various approaches. It basically reflects a fear and distrust of the collective and the fact that ultimately autonomy is supposed to be an individual affair.

Conclusion

Our route led us to a presentation of some elements of the interdisciplinary approach of the Program "Organization and Well-being", to its relationship with the theory of organizational action (TOA), to a discussion of some points that seem problematic. In particular, two key concepts that are interdisciplinary research and autonomy undoubtedly deserve further

discussion to understand, if the differences we have tried to establish are real or just the result of a differentiated use of terms. Nevertheless, the problem of definition often refers to differences in the conception of reality. We would also like to state here that the points of convergence with the approach are far more numerous than the differences that we tried to explain. One of these convergences is the need to depart from the approaches who use the argument of authority, their institutional seats and more generally their claim to exclusivity of the analysis of the social. The acceptance of a plurality of views in a discipline as well as the opening posture on the contribution of other potential disciplines to one's own field of exploration seems fundamental to allow a renewal of theories and empirical approaches.

From the point of view of work psychology

***Bernard Prot**, Conservatoire National des Arts et Métiers de Paris*

Introduction

In their paper *Work analysis for prevention according to the "Organization and Well-being" Program*, Maggi and Rulli (2012) put forward a fairly radical criticism of the methods of work analysis, which cast doubt on "the subjects' ability to analyze their own work [...] by the presence of the researcher, always re-affirmed" (*ibid.*: 20). On the contrary, they wrote that one of the fundamental features of the "Organization and Well-being" Program (O&W) is that "the analysis – with its transformational and re-design consequences – is entirely carried out and managed by the subjects themselves" (*ibid.*). This is an essential condition for interventions to foster a logic of early prevention, by integrating transformations into the organization's design. The authors even add: "We believe that it would be interesting to ask about the reasons that might impede, and on those that might allow, a truly active role taken by the subjects' in the analysis" (*ibid.*: 20-21).

The following text intends to inform the discussion of this issue. It does not address the general methods of work analysis, but focuses on a delimited question: how the participation of workers is promoted in the method developed by Maggi and his colleagues, as well as in the methods of the clinic of activity (Clot, 1999; 2008) in which we participate (Prot, 2006).

We have decided not to revisit the presuppositions and the methods of the two approaches, but rather to rely on some examples taken from the texts of Maggi and Rulli, especially the one about welders' work (Maggi, Rulli, 2014) and on one of our analysis. We have delimited our work to the coordination between researchers and workers, relying on the conceptualization of Maggi on this notion of coordination.

This text focuses on the elements characterizing each approach, and it shows an interdisciplinary complementarity. So the author hopes to keep the spirit of the "debate on work analysis" that was initiated in a previous work (Faita, Maggi, 2007).

Objectivity and subjectivity

The analysis of the welders' work process carried out by Maggi and Rulli produces numerous formalizations. They relate to the expected results, the technical actions and the modalities which allow the accomplishment of these actions, as well as the limits reached, in the details of each work completion. A total of eighteen elements of the process are described, from the initial task assignment to the welders - to weld the fins on the external structure of the pressurizer - to the re-ordering of the tools and protective equipment, the quality of the documents that define the procedure, the workstation, the artifacts and their functionality, the technical knowledge, the welding itself and the required finishes to comply with the strict rules, cleaning, etc.

In this methodical attention, we obviously recognize a characteristic of the work analysis of the Francophone tradition in ergonomics, which also constitutes an important basis for the analysis of the clinic of activity. For the method of organizational congruences, this is the first step in the description of the process. It will be followed by a phase of interpretation, and then by a third phase of identification of alternative choices. Of course, the distinction between the three phases is not a rigid chronological separation. It allows to distinguish these three poles on which the analysis unfolds by interlacing them sometimes, notably because "description and interpretation are intertwined: one feeds the other", as written by Maggi (Faita, Maggi, 2007: 88).

Thus, the analysis makes it possible to identify "objects" on which the regulation should go back to in order to improve the links between health and organization. An example: a new design of the gas nozzles drawn up with the participation of the operators could improve the safety and the convenience of use (Maggi, Rulli, 2014: 58). The text highlights a series of critical points that

should be faced by the regulation activity. These are, in a way, the outputs of the analysis. The text concerning the intervention on the health service goes beyond that, as it shows some transformations that were enacted over the years.

In the intervention based on the clinic of activity, although each intervention takes a particular form, it seems possible to consider that the analysis carried out with the workers is less focused on the exhaustive chronological description of the operations than on the approach of the Program O&W. According to the clinical approach, workers are invited to memorized situations during the early exchanges. These situations will be deeper studied because they are considered by the participants as "representative" with regard to the given objective of the intervention. We will come back to the term "representative situations" after insisting on the meaning of this selection work.

Defining which situations are "representative" is already an opportunity for the workers and the researchers to constitute a collective associated with the research team. In each analysis, participants are voluntary, as it can be read in the Maggi and Rulli's papers. It is also important to point out that in the case of the clinic analysis the "association" is less carried out on the basis of a systematic description work than on the basis of the interest that the workers find in the dialogue between each other and with the researchers, about something that escapes their argumentative resources and remains difficult to describe, even though their insistence to return to it allows us to make the hypothesis that it is something important in the exercise of their profession.

The progressive identification of "representative" situations is guided by researchers and workers from the more general framework that is determined with the sponsors, employers, trade unions, health services... Each intervention establishes an hypothesis that is specific to it, but a common idea is present in one way or another: the relationship between individual health and the organization of production is mediated by dialogues within the collective of workers, about the quality of the product or the service. Developing or restarting this dialogue based on the conflicts of criteria encountered in

everyday situations and bringing this dialogue to the more formal instances that regulate the organizational process, constitutes the central principle of the method of the clinic of activity (Clot, 2008).

If the first phase is the formation of a collective associated with the researchers and the production of a series of analysis by some volunteers mandated by this group, the second phase consists of conducting debates within the group as a whole, with possible extension to other colleagues concerned; the third phase consists of a resumption of these analysis with the hierarchical line and the safety or health demands, and with the employees' representatives.

To avoid widening the discussion to the many dimensions involved in the realization of these three phases, our attention will remain focused here on the first phase, because it makes it possible to emphasize an essential characteristic of the coordination between researchers and workers. We want to talk about the variety of interpretations between participants and peers. Let us be clear about this point, which characterizes the psychological approach adopted. In the clinic of the activity, we consider that producing descriptions enables workers to objectify in their own eyes what they know so well as it is their daily activity, but also that the working conditions give them very little opportunities to transform methodically into an object of thought, especially when the analysis concerns implicit knowledge. It is on this objectivized basis that each one is invited to return several times, alone, with a colleague, in a group, to discover or rediscover experienced contradictions and to explore not only the action carried out, but also the hoped, inhibited and untapped potentialities, sometimes considered as ineffective or impossible.

This constitutes the other characteristic side of the clinical method, the one related to the development of singular or collective unimagined thoughts, in the exercise of a debated dialogue. At this point, the analysis can become more subjective, on the basis of a precise objectification of the activity confronted with dilemmas experienced in the concrete situation. The dialogue engaged between peers and clinician is a way of opening up processes of

emancipation from conventional explanations, tacit agreements, and habitual renunciations, limits that are fixed without discussing them. "This is perhaps the very spirit of the third way that we seek to follow - writes Clot (2011: 26) - both more objective and more subjective than traditional psychologies".

It is through this alternation that the subjects and the collective can find margins of action, the availability to relaunch initiatives. It is on this dynamic that we seek to establish cooperation with occupational health practitioners, such as occupational health services.

Cooperation between workers and researchers

Let us pursue further the reflection on the search for cooperation between researchers and workers. We have deliberately used the term "cooperation". It is not a question of connecting persons of good will, nor of favoring a simple recognition, in the manner of the "Hawthorne effect". It is a question of constructing, for a period that is often long enough, the conditions for a shared production that is useful for developing the organization, understood here as a regulation process that does not separate health and production issues.

The duration of the intervention is an element of this cooperation. In the case of the staff of a public health organization, Maggi and Rulli even point out that the analysis has been developed "in an iterative way" over a period of about 20 years. The clinical interventions of the activity generally extend over several years.

Maggi and Rulli (2012: 8) argue in their approach that the analysis is "entirely performed by the same subjects" and even asserts that "the subjects involved in the work process are the protagonists of the analysis itself". This is why the training of workers in the methodology is also important for them. On the basis of Maggi's theoretical work on training and education and its critical questioning of the notion of transmission (Maggi, 2010), the approach adopted is structured in three axes:

- "the axe of the methodological knowledge, of witch the subjects involved in the work process can appropriate",
- "the axe of work competencies, specific of those subjects",
- "the axe of the epistemology of the action and decision process, which allows to connect the knowledge about the organizational analysis and the competencies intrinsic in the work processes". Neither according to the traditional model of "transmitted" training, nor through a militant act, but with "training enacted by and within the work process […] where only the learning by the implied subjects allows them to appropriate the methodological knowledge and to develop new knowledge as well." (Maggi, Rulli, 2012: 9).

The appropriation of methodological knowledge by the workers is therefore an essential condition for the quality of the regulation to continue to develop in the company after the departure of the researchers. Cooperation between researchers and workers can thus be considered as structured by these three axes and the development of relations between them. In a clinical intervention of the activity, a learning process of the method happens during the analysis, to understand the method of crossed self-confrontations and to choose the filmed situations. It is also through experience that workers develop their capacity to support peer-to-peer dialogues first and then with the hierarchical line by identifying the "criteria conflicts" they encounter.

Less oriented towards the entire work arc, the clinic methods of the activity are more tightened on the realization of a shared experience of another regulation between workers and with the hierarchy, with trade unions and health and safety prevention services, based on a collective deliberation of quality criteria for work. It is in this experience that everyone can find the feeling of leaving a "footprint" in the organization of work and this is an essential criterion of health at work (Clot, 2008: 169).

The genetic moment of the organizational action

We now examine the discussion about the relationship between researchers and workers on the basis of the distinction between co-operation

and co-ordination. Maggi has provided useful clarifications on the basis of classical work and the many misunderstandings generated by the current use of these terms, (Maggi, 2003/2016: Livre II: 37-69). Maggi notes that coordination has a history prior to action in context, whether it comes from the register of prescribed instructions and procedures (heteronomous) or from the collective (autonomous) elaboration. But within the work life, many events can show the limits of these predisposed forms for action. It is then necessary to agree in a situation, to take account of the context, to realize a "contextual coordination".

It is not enough to distinguish between anticipated coordination and coordination in context. It is essential to consider that coordination arrangements that can be adjusted to the context may question the limitations of pre-action coordination. Maggi (*ibid*.: 67) insists on this essential moment: "at the crucial point of the transition from contextual coordination to pre-arranged coordination, the genetic moment of organizational action can be analytically grasped".

Maggi's formulation has a general scope within a theory of organization as organizational action. It is a moment of transformation of established forms of coordination.

Based on the example of an intervention (Prot *et al.*, 2008) this paper aims to mobilize this conception of coordination and its transformations in order to study how the participants take part in provoking these "moments of organizational action".

The case concerns the links between occupational health and the organization of production in an industrial establishment working on the assembly of railway switches. The crane operators who carry loads, and ground-men who conduct the movements of loads on the ground, compose the work team. Four of them are mandated by the team to be filmed in order to analyze their activity with the researchers. It is the crossed self-confrontation method (Clot, 1999). A crane operator was filmed dropping off a counter rail, using a serving-man on the ground. This daily maneuver requires a perfect deposit so that four rails are aligned rigorously, despite the movement of the

long piece of metal suspended from a 10 meters metallic rope. Working in pair, the serving-man is shown in the film tending his right arm horizontally, to indicate the direction that the crane operator has to follow, then moving down his arm quickly and shouting "Yeah!". The operator winds down the load to the ground at once. The maneuver is running successfully with precision and smoothly.

The researcher is surprised by the comment of the crane operator. He said: "The ground-man just needs to tell me 'a little bit Persan' and as soon as he says 'it's good', I drop it». On the screen we see the ground-man hold out the right arm horizontally, to indicate direction, whereas the analysis crane operator considers his colleague told him "a little bit Persan". The discussion then reveals that this strange "Persan" is the name of the neighboring village, in the direction indicated by the ground-man's arm. The village of "Beaumont" is used to indicate the opposite direction. Further in the analysis, the workers explain that this original geolocation has the great advantage of offering two stable reference points outside the site and therefore external to their respective movements. These external references are essential for the servant who may have to turn around an obstacle at the same time as the deck conductor is seated on a swiveling seat on himself or herself as the charge is moving. The workers of the site have developed an "everyday concept" (Vygotski, 1934/1997), which links the emotional history of out-of-work life and technical gesture for those living in these villages. Collective significance and efficiency are thus linked by this linguistic diversion, this "catachresis" (Clot, Gori, 2003).

From this example, the cooperation between researchers and workers can take different forms. The ground-man does not say "Persan", he uses the gestures simulating a traffic light that are prescribed in the training courses in security and logistics procedures. When he is filmed, his activity is not only addressed to his colleague, the crane operator, it is also intended for the researchers whom he may consider spontaneously as representatives of the hierarchy or more generally of the monitoring authority. The crane operator, on his part, speaks to the researcher by utilizing the daily concept of the collective,

as if the researcher would be part of it. These workers have two different conceptions, which will be mobilized according to the idea they have of the work of the researcher who is with them.

The researcher is not a neutral observer. His function is not only defined by the discourse that is held at the beginning of the action and the established objectives. It is the result of the cooperation established between them as the days go by. Will he remain an external representative of management? Will he become a way to share and develop resources for action among colleagues? Can he also become a useful auxiliary for developing arguments addressed to the hierarchy?

The clinical practitioner does not try to artificially reduce the contradiction experienced between these three different positions. He seeks to establish and develop the dialogue between workers about how to regulate their techniques between themselves, but also in regard to the hierarchy. Are we going to talk to the safety officer about the limits of the coordination as it is transmitted in official training, with traffic light gestures? Will we support him or the team leader in the interest of the system of reference that the collective has stabilized, specific to local history? This example shows that the researcher's analytical method quickly raises critical points of the trusting relationship upon which the regulations between different coordination sources are based on.

The habit of operating on two different conceptions (i.e. one that can be seen from the hierarchy, and the other that is used in her absence) is disturbed by the presence of this "intruder" (Prot, Miossec, 2007). It provides an opportunity to rethink the regulatory modalities implicitly established. Maggi's idea quoted above will be repeated here: "at the crucial point of the transition from contextual coordination to pre-arranged coordination, the genetic moment of organizational action can be analytically grasped". The clinical researcher, in the methods of the activity clinic, is exposed to interesting misunderstandings. He has a role of a revealer, so that the workers decide to restart, or not, the

dialogue on the ways to regulate relations with the hierarchical levels, in relation to critical situations.

In the industrial establishment mentioned here, the organization of cooperation between workers and the hierarchical line had been modified several times and from several angles: change of production equipment, reduction of management levels, computerized system of tasks management. The level of interpersonal conflict was high, said the doctor of the site. He also encountered a series of symptoms showing a degradation of health, which led him to solicit the Committee on hygiene and working conditions. The volunteers for the cross-confrontations and the researchers came back to the committee with the filmed images of situations and their own analysis, including the previous example. Thus, what was hidden or just officially tolerated is opened to the dialogue. They show the involvement of workers in the search for better compromises to overcome the contradictions experienced and also the limits they have reached from where they believe that it is the conception of the tasks themselves that must be discussed. During this exchange, in front of the crane operators and ground-men, the people responsible for safety and training of operators and the head of the establishment argued on the possible interpretations of the security rules, the antinomies between these rules and the constraints of time and space to deal with.

The text by Maggi and Rulli (2012: 16) shows that the company members were invited to reconsider the established regulations about a lot of technical and managerial aspects. They have been confronted to "alternative organizational choices and levels of induced constraint" based on the recommendations established by the analysis. In the case study of the welders, as well in the text we have been able to read about the experience with health and hygiene services, the role of the researchers remain unclear. How do they participate in the identification of potentially conflicting situations which contain a "critical level of congruency" (*ibid*.: 13) and on what occasion the workers can engage the discussion with the hierarchy.

Conclusion

As Maggi wrote (2003/2016: Livre I: 31), since the Weberian epistemology, "understanding and explaining are both necessary" to overcome the cleavage that often dissociates objectivism and subjectivism in the social sciences. This epistemological choice implies a very peculiar relationship between researchers and workers. In the example that we briefly reported, we have emphasized the fact that workers use the methods of analysis proposed by researchers to discover, not only in the eyes of the researcher but in their own eyes, how their ways of acting are compartmentalized in case of presence or absence of the hierarchy. Then they have the opportunity to reconsider among colleagues the validity of this consensus. They can more consciously evaluate their interests and their limits in health and work effectiveness.

This is a turning point in the commitment to work for workers with researchers. Clot (2011: 30) particularly emphasizes the "vitality" that can support these movements of analysis when the subject or the work group interacts with the researcher, develops the relations between objectification and subjectivity in a "game of alternation". The pleasure to develop its power to explain and to understand with the researcher, the discovery of new margins of initiatives, the development of the power to act on the situation of work, proceed together.

The dynamics that are established with the researchers must continue after the researchers leave. The text by Maggi and Rulli (2012) supports the importance of learning by workers of methodological resources about the organization. We emphasized the principle that through their relations with clinician-scientists, workers find a good opportunity to reconsider collectively how they regulate their cooperation with the hierarchical line.

It might be because they highlight on each of these dimensions from their respective disciplines that the method of organizational congruences and the clinic methods of the activity propose complementary resources to design sustainable transformations of the organizational process.

From the point of view of ergology

***Renato Di Ruzza**, Université d'Aix-Marseille*

Introduction

Faithful to their intellectual and scientific project, and in conformity with the "tolerating epistemology" that they claim, Bruno Maggi and Giovanni Rulli (2012) urge the discussion, the debate, even the dispute. The issues they propose have three characteristics:

- they are essential and frequent for all those who study work and its transformation;
- they are addressed to all those who, as far the "world vision", the "way of thinking" and the "epistemological posture" are concerned, constitute a homogeneous enough group so that the discussion is possible, useful, pertinent;
- they are open, always at the root of future research, to hypotheses to be developed and conceptualizations to be perfected.

The debate has been already started between the "Organization and Well-being" Research Program's approach and the ergological approach developed at the Université d'Aix-Marseille. It took different forms, but it is still incomplete just like, fortunately, the theoretical discussions in social and human sciences. So, it is not useless to stop and "assess the situation".

At first sight, such assessment appears to be constrained between two general impressions.

The first one is an impression of radical difference: the giants' shoulders upon whom they are standing are not the same. Max Weber, Herbert Simon, Chester Barnard, James Thompson, are at the foundation of the theory of organizational action (Maggi, 2003/2016), while the ergological approach finds its origins in the works of three "atypical physicians": Georges Canguilhem (philosopher), Alain Wisner (ergonomist) and Ivar Oddone (work psychologist)

(Schwartz, 1988). This has unavoidable consequences on the language, the concepts and their utilization.

Paradoxically, the second impression is about an obvious proximity in all essential things: the need of an epistemological dimension of every reflection about work and human activities, the recognition that nothing can be said about work if what workers themselves say is neglected, the conviction that all human acts are social acts, that is, they are socialized and socializing, at the same time constrained (hetero-regulated) and autonomous (normative). Obviously, it would be possible to extend the list of proximities by giving more details, but this will surely appear in the themes that we chose to "assess the situation".

Indeed, Maggi and Rulli ask three questions, to which we will try to answer with the support of the ergological approach: how is organization dealt with? What is, in the analysis, the position of subject at work in relation to the researcher's position? And, how is interdisciplinarity conceived?

Toward an integrative pluridisciplinarity?

Let us start from this last question, while avoiding any terminological problem: we will only use the word "pluridisciplinarity", meaning that we include at the same time the traditional pluridisciplinarity, interdiscplinarity and transdisciplinarity, or even the multidimensionality in the meaning proposed by Henry Bartoli (1991). (We refer to arguments by Di Ruzza and Halevi, 2003).

For more than half a century pluridisciplinarity ignites frequent debates: encouraged, denied, claimed, imposed, sometimes utilized, it is conceived by some as "the" solution allowing to solve issues so complex that traditional "academic disciplines" could not deal with by themselves, by others as a purely ideological "key word" with the only goal of masking the insufficiency of traditional disciplines to face problems generated by the object that they chose.

Pluridisciplinarity, indeed, is not something that can be stated. It's a practice that can be found in activities carried out by those who are inclined,

because of their job, to develop analysis, to make diagnosis, to formulate prognosis.

If we do not consider pluridisciplinary practices concerning scientific disciplines that entertain "constitutive relationships" (for example, physics and mathematics; cfr. Althusser, 1974), there are two polar ways of practicing pluridisciplinarity:

- pluridisciplinarity between disciplines that are already defined, constituted and recognized as scientific; it is *cooperative pluridisciplinarity*;
- the other practice of pluridisciplinarity is more subtle, harder to pursue and to qualify, because it puts at stake the existence itself of the disciplines concerned, both because the object to be examined is continuously redefined, which constantly violates the boundaries of such disciplines, and because unavoidably a "new discipline" shows a tendency to be built, by integrating and re-normalizing the previous disciplines: it is *integrative pluridisciplinarity.*

In a way, cooperative pluridiscplinarity is at the same time the contrary and the consequence of a division of labor: it is a matter of having specialists, that division of labor formerly separated, to cooperate. There is no scientific specificity in this. This pluridisciplinarity is (more or less, and more or less explicitly) exercised by all those who work, hence implicated in the division of labor. The principle is simple: everything starts from a "commissioned order", mostly, but not always, external to the specialists to be invited, and its execution requires coordinated interventions concerning different fields that are institutionally recognized and concretely practiced. A simple example is the construction of a house, which requires the intervention of many professional categories.

However simple, this case allows to emphasize some characteristics of the required cooperation:

- everything starts from the "commissioned order", which may come from someone totally external from the professional categories, but even from one of them (even though, in that case, for reasons that have nothing to do with the professional category), which can be more or less precise, and in order to be

made more precise a previous intervention of the same professional categories is often needed (to show what is feasible, what is beautiful, what is solid, etc.). In other words, there is often a pluriprofessional work on the commissioned order, which adjusts it, reformulates it, makes it possible and executable, and poses to every professional category a number of precise problems to solve;

- the execution of the commissioned order requires that the cooperation of professional categories is coordinated: not all intervene at the same time, there is an intervention order, according to specific timings, and each problem may be only solved if it is inserted in the logic chain of problems to be solved, defined and guaranteed by the coordinator;
- every professional category has the competences or the abilities to solve one or more precise problems, while respecting the work of others: the plumber will solve hydraulic problems and will not work on the structures, which is a task for the mason;
- finally, often, problem solving will require a "dialogue" between the various professional categories (which could be called self-coordination): between the plumber and the floor specialist in order to know at what height the bath tub should be placed in order to avoid ugly cuts in the tiles; between the carpenter and the glazer so that the shape of the windows will be compatible with the requirements to cut the glass, etc.

Overall, no matter what the final outcome is and its conformity to the commissioned order, these characteristics represent need and are present anywhere the goal is to build a house.

What is true for the cooperation between professional categories is also true for the cooperation between scientific disciplines. The history of science provides many examples of such practices. In every case there is a "commissioned order", and pluridisciplinarity is required by the scientific and technical needs in order to solve specific problems, whose solution depends on the intervention of specialists from specific disciplines who cooperate for the accomplishment of a common goal, the "commissioned order".

At first sight, what reunites the different "human and social sciences" often seems to correspond to this case. However, if we look more closely, it is not that simple. Some of the characteristics that we described are not found so clearly:

- if the "commissioned order" exists, is it really such in the sense that we defined above? In other words, how that "order" was re-elaborated to pose "precise problems" to each of the disciplines concerned? Does its formulation allow to list the disciplines to be involved? Right away "pluridisciplinarity" is evoked rather than specific disciplines whose cooperation is needed to solve specific problems concerning their own field of expertise;
- how does it happen that the majority of involved disciplines (that, more or less, concern the "human and social sciences") have competence to solve any "specific problem"? The nature and the range of such presumptuous competences are an object of eternal debate even within each of them. And such debate is so vague and lively, so loaded with social stakes to provoke the intervention of everybody, independently from the specialty: the "dialogue" cannot be a "self-coordination dialogue", it is necessarily a dialogue about the competences themselves (for example, the economist considering social relations within the company as part of his own object of analysis will not hesitate to interact with the sociologist or the jurist to criticize their analysis, diagnosis and prognosis);
- if we consider all of the above it becomes obvious that any coordination is practically impossible.

In a way, if conceived as coordination between disciplines concerning the "human and social sciences", pluridisciplinarity is a myth. A myth that can be found in what Canguilhem called the "scientific ideologies" (1978): sociology, political economy, psychology etc., do not stop from borrowing notions, methods and procedures from existing disciplines, trying to strengthen their credibility or even their scientific legitimacy while, in fact, they only show their desire or their illusion of being "true" sciences. A myth that can also be found in the practice of "round tables": "neighbors" are invited, somewhat randomly,

in order not to forget anybody, which means that one neither really knows whom to invite, nor where one is at or going; but people are nonetheless persuaded about the virtues of such pluridisciplinarity, without asking if in order to understand something that everybody ignores it is enough to invite all those who ignore it.

Overall, this first form of pluridisciplinarity, conceived as cooperation between specialists of different "human and social sciences", doesn't seem to be pertinent in order to face effectively issues that concern social life. Indeed, it presupposes the existence of scientific disciplines clearly identified as such, with not need to continuously justify their scientific legitimacy; and this is not the case in the field of "human and social sciences". This doesn't mean that there's no possible cooperation: the problems of prevention of professional risks do have dimensions that are economic, ergonomic, juridical, sociological, psychological etc. (and, after all, this "etc." means everything), but the whole problem is to know who can define them as such, and who is competent to deal with them and talk about them.

The history of science in the last half century also provides numerous examples of the second form of pluridisciplinarity, that is, integrative pluridisciplinarity. It involves scientific disciplines that are considered as "close", on realms or objects that were previously considered as separated by identified boundaries. New relationships are created between such disciplines, which cannot be considered similar to relationships deriving from a division of labor, and generate new disciplines: physical chemistry, biophysics, geochemistry, for example. And like any time a new science is created, these new disciplines must define a new object, new methods, new concepts. In this way they separate themselves from the sciences they are derived from. This has nothing to do neither with the cooperative pluridisciplinarity, nor with pluridisciplinarity as it is trivially conceived. New disciplines are not the outcome of pluridisciplinary "round tables", they are not pluridisciplinary sciences, they are new sciences that assimilated existing ones by surpassing them and, in part, renormalizing them.

The requisites of such operation are different from the ones guiding the cooperative pluridisciplinarity. In *Idéologie et rationalité dans l'histoire des sciences de la vie*, when he tries to describe the history of plants physiology, Canguilhem (1978) shows very well as such discipline is the successor of several previous disciplines; at the same time, he insists on the "epistemological rupture" between these disciplines and plants physiology, thereby unifying the continuity of the project and the discontinuity of the object.

The starting point of the pluridisciplinary process in not anymore the "commissioned order" but the "project". The project is not something coming from the external of the involved disciplines; it comes from a scientific or theoretical need intrinsic to one (or more) of them. It mostly takes shape of the "intuition" of a new concrete object, as its recognition moves the boundaries of the objects of the existing sciences, and it requires effects of relocation in the existing conceptualizations. That is what Marcel Mauss said, in his own way, in *Sociologie et anthropologie*: "Progress in a natural science is made exclusively in the concrete, and always in the sense of the unknown. Now, the unknown is found at the boundary of sciences, were professors "eat each other" as Goethe said (I say "eat", but Goethe is not so polite). It's generally in these badly separated realms that the urgent problems are found" (Mauss, 1950: 365).

This starting point, which combines the project continuity of the object discontinuity, allows to understand the aspects in which this form of pluridisciplinarity is the opposite of the previous one:

- it is not founded on the cooperation between existing disciplines but the elusion of such disciplines, their confrontations, the conflicts that make them oppose to each other in their attempts at conceptualizing the new object:
- it is not the competence of each discipline "at work", but their incompetence; or, more exactly, their incompetence in dealing with the new object (if this was not the case, the object would not be new); recognizing such incompetence in dealing with a recognized object (even if only intuitively) is part of the project itself, and it is at the center of integrative pluridisciplinarity; to recall an image that we already used, people around the table are not ignorant about what they

ignore, but incompetent people aware of their incompetence trying to understand it;

- the "respect" for disciplines, by consequence, cannot be accepted anymore, on the contrary it's the irreverence that has to win; each one does not move forward by himself, but he rummages in the neighbors' fields, to bend their concepts and methods with enough strength so that incompetence becomes explicit, becomes somehow theorized, and the road is open to new conceptualizations and methods;

- coordination (and self-coordination) takes a radically new dimension; not anymore a gathering of precise problems to solve that is spatially and temporally articulated, but a problematization, imprecise and always re-elaborated, of partial solutions, a problematization that is usually pluridisciplinary and that produces the integration and the renormalization of existing disciplines;

- finally, while in the case of cooperative pluridisciplinarity the issue of the "return toward the discipline of origin" does not emerge (no discipline has to go back because, in fact, none left), in the case of integrative pluridisciplinarity such return is an eventuality, an issue, and a problem: is it compulsory, is it wise to do it, and how to do it? In other words, what is nature of the "rupture" generated by the conceptualization of a new object? Is such "rupture" consumed? It is clear that there's no pre-constituted answer to these questions, it is important though that they are asked.

Naturally, these characteristics are the opposite of the characteristics of the cooperative pluridisciplinarity only in their principle: every form represents a pole and it happens rarely that one of the two poles work without the other being more or less active. What matters is within the "more or less".

It is clear that the nature itself of "human and social sciences" leads to prioritize integrative pluridisciplinarity, and the ergological approach is a good example: having as a starting point the analysis of work situations, in this project quickly appeared the intuition of a "new" object, the human activity, which lead to a re-disposition of "human and social sciences", in a particular

configuration, designated by the "dynamic device with three poles", which requires all of them, which renormalize them both in their content and in their methods, and in order to do that compare them, in the same protocol of their renormalization, with the uneducated knowledge derived from the experience of concrete human activities. Hence, the ergological practice is an "indiscipline": because it "breaks" from the previous disciplines, because it is constantly out of phase with the previous or predefined norms and, finally, because it cannot be defined as a new discipline.

Does the theory of organizational action, upon which is based the analytical approach of the Interdisciplinary Research Program "Organization and Well-being" have the same nature? It is seems that the answer is positive. This theory is a "project", tries to define a "new object" and it re-configurates knowledge about work and organization. In this respect that "interdisciplinarity" that it claims is very close to integrative pluridisciplinarity, hence to indisciplinarity.

Can subjects at work analyze by themselves their own activity?

After all, the issue concerning the position of the subject at work in relation to researchers is logically consequential to what precedes it. Let us admit that work is a place where several things meet:

- on the one hand, two kinds of rationality: one resulting from antecedents norms that are acquired, capitalized and indispensable for the execution of such activity, and the other inserted in the activity itself, of which the individual protagonists that are continuously renormalizing are the carriers,
- on the other hand, two kinds of knowledge: those governing the antecedent norms, generated outside of the concrete, specific situations of work, accumulated through the actions of different specialists of academic disciplines which have work as an object, and recognized and validate by the different institutions which have such role (the scientific community, the peers, the University etc.), that is, the *institutionalized knowledge*; and the knowledge allowing the renormalization of antecedent norms by those who work, in their

concrete activities, derived by their own experience and their own know-how, that is, the *invested knowledge*.

In this case, the ergological approach relies on two proposals.

The first proposal is the following: the production of knowledge on work must be based on dialogue and/or confrontation between different knowledge generated by the traditional academic disciplines and the knowledge that different protagonists of human activities put in place while executing their activities. Obviously, there are disciplines for which this principle is already acquired (for example, the majority of work sociology, of activity ergonomics, or even part of education science). But there are other that ignore it almost completely (in particular, economics). Thus, this is not about denying, refusing, abolishing, rejecting the knowledge of which academic disciplines are carriers, but it's about "doubting them", in a dialogue, in a debate, with what the protagonists may say about the way they exercise their own activity.

According to this point of view, this kind of knowledge production is actually "indisciplined" and "indisciplinary", not because of a fashion effect, induced by the recurring invitation to pluridisciplinarity, but more simply because the knowledge of the protagonists of the work activity do not belong, by principle, to the "scientific discipline". Obviously, this is not about denying the disciplinary competence of any worker (the accountant must know accounting, work inspectors must know labor law, the physician must know medicine), but it's about admitting that in their concrete activity there's always much more than just these disciplinary competences. One can evidently ignore such "much more", throw it in the pile of "vulgar knowledge", but it's an epistemological choice of which one must be aware and that deserves a discussion. This kind of pluridisciplinarity ("indisciplinary") is not built by knowing the knowledge generated by many disciplines, but in recognizing that disciplinary knowledge may be altered by knowledge that do not belong to it. That is basically what Canguilhem (2005) called in his thesis the "foreign subjects".

In other words, to summarize this first proposal, the ergological approach is a way of reflecting concerning the knowledge production on all socialized human activities. Hence, it may concern all academic disciplines that assume them as an object by considering two foundational principles, which allow to study them "from the point of view of the activity":

- the activity, and particularly the activity of work, is always a place of a "debate of norms", and within such debate, in the "renormalization of antecedent norms", knowledge about the activity itself is produced, knowledge that it's better to put into a dialogue with the knowledge generated "from the outside" by academic disciplines;
- this knowledge, "invested" in the activity, may be expressed only by its protagonists.

The second proposal leads to the transformational dimension of the ergological approach. Such dimension has nothing to do with any pretense of imagining or elaborating the nature, the content or the sense of the transformations to be produced from a "scientific" point of view. The ergological approach is totally different, indeed, from the approach by the "expert" which makes "prognosis" after their "diagnosis". Essentially, he doesn't want to "understand work to change it", but to "change it to understand it".

In order to clarify this proposal we take inspiration from something that Louis Durrive (2014) said in his introductory conference at the 2nd Congress of the International Society of Ergology: "Behind 'working in conformity' (that is, in a way that is conform to what is prescribed) there is always a 'working otherwise', even if it is hidden by the work outcome". This statement deserves reflection, because it is very consequential. Two words are essential: it exists ("always", he said), a "working otherwise" which is always hidden. It's in such "working otherwise" that are located the "supply of alternatives" of which the ergological approach talks about, sources of transformations that are already present, concealed in the activity itself. But they are hidden, made invisible or

opaque, and that's what prevents from understanding what the work activity exactly is.

Thus, the ergological approach proposed to make such supply of alternatives "visible", in order to analyze the work activity. And it's by making visible what may be a source of transformation that the nature and the content of such activity can be understood. The whole problem is about in the practicality of such uncovering.

Evidently, researchers cannot ensure by themselves such understanding, based on the previous conceptualization that they generate. The singularity of each work situation requires that they truly learn what generates such singularity. On the other hand, workers cannot ensure by themselves such understanding, based on their own knowledge generated within their activity. An epistemological and conceptual effort is required, one where the needed learning can only be co-constructed.

Here a difference seems to emerge between the ergological approach and the "Organization and Well-being" Program. Maggi e Rulli (2012: 8) clearly state that "*only* the same subjects [at work], and not external researchers, are able to analyze and asses appropriately the work process in which they are involved", and the "protagonists" of alternatives can "*only* be the subjects of the process. (emphasis added by us).

The fact that they are the "only" protagonists of their work transformation is not problematic. On the other hand there is a problem about the first part of the statement, which leads to the meaning that is appropriate to attribute to the word "to analyze". The analysis that we are talking about could not be reduced to a simple "description" of the work process (no matter what the methodological tools used to express such description). To analyze is to produce knowledge which presupposed and induces a minimum degree of conceptualization. How and what such conceptualization may be outside or at the margin or without any previous conceptualization (which may be proposed by the researchers, but also by others such as the workers' unions, for example), and what would be like its validation? The follow up of Maggi and Rulli's

writings seems to attenuate the starting statement. The process that leads the working subjects to be the "only ones" lies, indeed, at the intersection of three axis:

- the axis of the methodological knowledge, which workers can acquire through an adequate training;
- the axis of work competences;
- the epistemological axis, which relates the knowledge about the analysis and workers' competences.

Again, this is about in the meaning of words used to designate the third axis: are the researchers mostly the carriers of the knowledge about the analysis? And such relationship is it an activation of a dialogue through which new knowledge emerges? If the answer is "yes" to both question, then the difference that we talked about above would be greatly reduced.

An organization without concept?

The third question, concerning the theme of organization, is the simplest one, because it invites to a simple answer: in ergology there is neither coverage nor the concept of organization. The term does exist obviously, but only as a vague, essentially empiric notion, at best defined as a description of inter-connected elements, mostly relegated as a second thought. This simple answer, however, does not erase the question: why such absence?

Indeed, there is a reason why the ergological approach could neglect this theme, which can be faced in substitution terms: the ergological approach does not need the concept of organization because it substitutes it with another concept. Hence the question: with what concept(s) the ergological approach compensate the absence of the organization concept in its theoretical device, while it appears to be essential in the theory of organizational action?

Without assuming to provide answers to such questions, it is at least possible to provide a comment on them. The starting point is located in a statement: according to the "Organization and Well-being" Program the concepts of organization and regulation are strictly connected, so that

organization seems to be defined through regulation. Thus, we approach the discussion through regulation, according to Canguilhem's theses.

Many studies on regulation, especially but not only in political economy, refer indeed to the notion of regulation proposed by Canguilhem in the article "Regulation (épistémologie)" of the *Encyclopaedia Universalis* (1972; 1985): "Regulation is the adjustment, in conformity to some rule or norm, of a plurality of movements or acts, and of their effects or outcomes that their diversity or their succession makes them foreign to each other beforehand" (Canguilhem, 1985: 797). This definition implies three relevant ideas: first, the idea of "adjustment", which makes regulation dynamic and makes it a process that develops over time; second, the idea of "norm" (assimilated, in this instance, to "rule"?), which constitute a central idea in Canguilhem's thought; finally, the general idea according to which there are movements and acts (with their effects or outcomes) which are *a priori* foreign to each other. The ergological approach, when it defines the work activity as the renormalization of antecedent norms, locates itself implicitly within the development of such definition. And the theory of organizational action does not seem too far from it. Indeed, there are in both cases two regulation levels: an antecedent regulation, prescribed, organized from the outside, and a renormalized regulation, which takes into account uncertainties, risks, unforeseen events.

If we keep reading Canguilhem's text, we realize that regulation is, in a set of constraining relationships, a permanent stake of the organization, the latter being regularly reconfigured under the effect of conflicts and contradictions: "the concept of organization […] conceals the issue concerning whether and how a number of groups that are different in terms of functions and hierarchized in terms of positions may be integrated in a totality able to maintain its cohesion over time, by adapting, without distorting itself, to historical situations partially unforeseen. If we compare it to the organization of a biological organism whose survival shows exactly the effectiveness of its regulatory systems, the social organization appears as a continuous attempt, an always uncompleted project" (*ibid*.: 798). Again, this appears to be completely

compatible, if not identical, to the ergological approach vision (for example, the concept of collective entity relatively pertinent) and to the vision of the theory of organizational action (we refer to the three examples provided in the Prologue of Maggi's book (2003/2016): regulation is the set of processes that maintain the organization within the limits of its identity, and at the same time make sure that it continuously evolves.

Thus, to bring back a theory of social regulation to a study about the creation of a society, of its organization and its reproduction, seems to be insufficient. Given a certain society, it is not about being interested simply to the way it works. If it is always changing, a regulation theory will always be incomplete. It is a big difference from biology. If biological organisms have an history, their evolutions and mutations have been integrated, internalized. On the other hand, social organizations produce specific institutions (organs), outcomes of conflicts but also stakes of conflicts. "The history of society juxtaposed within a space of technical, economic, political, informational, affective relations, an external space to the individual human organism, several institutional organs, improvised and meditated, but always late in relation to the awareness of needs that created them" (*ibid.*: 799). This way Canguilhem never assumes that it is possible to provide "models for the solution of social regulation problems and remedies for the situations of mis-adaptation born out of the spontaneous rivalry and the conflicting relations of different groups for which are charged the functions of social life" (*ibid.*).

Hence, there is no concept of organization in the ergological approach, but a frequent reference to Canguilhem whom is close to it, as far is admitted that human activity (including work, of course) is necessarily socialized and socializing, regulated and regulating, organized and organizing according to the dialect antecedent norms/renormalization.

Continuing the debate?

Overall, three questions and three answers for a discussion "among friends" (Di Ruzza, Halevi, 2003), and three statements: a strong proximity to

pluridisciplinarity, an hypothesis of proximity about the relationship between researchers and subjects at work, a lack of an *a priori* proximity about how to deal with organization. A debate does not end, it continues …

From the point of view of language as activity

Daniel Faïta, *Aix-Marseille Université*

Introduction

I would like to begin this contribution by examining the specificities of my position, even though this approach means that I will be taking a more scenic route, and even one with a few sharp turns. Without this advance notice, my participation in this debate might seem a bit unconventional. As a linguist specialized in the acquisition of languages by migrant populations, and especially by migrant workers in the "field", I came to explore the workplace in a very "contextual" manner, not only as an environment in which language is learned, but also as one of living and social interaction between men and women who find themselves far away from their original cultures and ways of life.

The world of work is an exemplary case of these sorts of permanent tests, in which people are required to follow rules and codes while they are doing their best to try to acquire the means to understand and learn them. It also exemplifies the impossibility of taking action without the resource of the collective experience of the work environment and the kinds of knowledge it produces. It seemed clear to me that work would constitute a field within which a wide variety of scientific problems come together, placing the understanding of this human activity at the core of their preoccupations. Thus it was logical for me to choose to associate myself with the efforts of researchers in social sciences concerned with human activity, such as ergonomics, psychology and the sociology of work.

However, it was the philosopher Yves Schwartz's invitation to take part in creating a truly multidisciplinary approach [1] that offered me a new possibility: to explore the validity of certain concepts and hypotheses produced by research in my field in reference to elements that had habitually been passed over or minimized by it, in particular the connections between language and industrious activity. The preliminary phases of this project had a decisive and transformative influence on how I came to view language issues. First came the many meetings held as part of developing university programs open to enterprise workers, and then, on the basis of the initial concrete experiences, a series of texts were written in collaboration in order to evaluate this exploratory work.[2] Responding to requests made by workers' collectives, which took place in the context of new rights granted to workers in France after 1981, was a natural outcome of this first phase, and it was very significant because the methodological innovations required were very demanding. This period was also rich in discoveries and meetings, which led to other equally interdisciplinary approaches, such as that of Bruno Maggi, who took the initiative of contacting me. In the following pages the consequences of this first contact will be described.

2007: opening new perspectives

My methodological framework, based on *self-confrontation through dialogue*,[3] which I first sketched out in 1989 (Faïta, 1989) and which was being applied systematically by the ERGAPE [4] team, had many common

[1] Initially known as the Multidisciplinary Analysis of Work Situations, it became a DESS [Master's-level) degree program at the Université de Provence in 1989.
[2] See Schwartz, Faïta, 1983.
[3] This is how I have chosen to qualify the method developed through the work of the ERGAPE team. It is important to distinguish this approach from those referred to as the "analysis of courses of action", which also make use of self-confrontation and, more generally, other methods that use this "technique" as a sort of tool for collecting speech data or the "traces" of past activities. Similarly, for reasons that will be explored in what follows, I will not use the term "self-confrontation interview".
[4] The "Ergonomics of the work of education professionals" research team, Aix-Marseille Université.

presuppositions with the *method of organizational congruences* (Maggi, 1984/1990: 103-126; 159-177), as developed in the "Organization and Well-being" (O&W) Interdisciplinary Research Program. Among the most significant of these was the prominent place given to subjects[5] engaged in activity, who were not merely to be submitted to experimental protocols or thought of as suppliers of "data" to be collected. No less essential was the explicit inclination to attribute meaning to the specific, singular aspects of actions, by constructing the knowledge of work on the basis of its physical and practical reality, thereby rejecting the *objectivist* abstraction that focuses on generalities.

After several years of research and the development of our respective hypotheses, especially with regard to methodology, it was time to undertake an *in situ* comparison of the methods suggested by our different approaches. On the basis of our shared presuppositions, the same object of study was chosen: a significant situation in the work of teaching. The objective was also to evaluate whether our approaches were complementary enough for us to conceive of a fruitful collaboration. The results of this research were published in the book *Un débat en analyse du travail* [*A debate about work analysis*] (Faïta, Maggi, 2007), which can be qualified as a "synergy" of the two approaches to the study of work situations. The researchers who contributed to this project shared a view to which I have already alluded: the expertise of professionals who willingly participate in analyzing their own work activities constitutes the axis whereby these activities can be known and transformed in a positive direction. Without discussing the matter with each other, the two research groups began projects that focused on the transformation of the situations and states encountered in the related work environments. From its side, the ERGAPE team took up this position with a double purpose: to contribute to producing new knowledge and to create, consistently with the clinical approach proposed by Yves Clot in work

[5] For the sake of concision, I will prefer this term to its many synonyms: acting subject, operator, salaried employee, etc. However, the concept of the "psychological subject" is excluded from this list. What is essential for the present article is that the "subject" in question here can be grasped and is defined in and by the framework of his or her activity.

psychology, "a methodological means intended to become a useful instrument for the activity of work groups themselves" (Clot, Faïta, 2000: 8).

From converging principles to methodological concepts and concrete approaches

These premises will serve as the basis for the position I will take on the convergences and questions that emerged during the discussions of the approach of the O&W Program. How, in substance, can one grasp the presumed complementarity of these two approaches - the method of organizational congruences (MOC) and the methodological framework of self-confrontation through dialogue - in this "debate about the approach of the O&W Program", without reducing the discussion to one perspective only?

In keeping with the preoccupations stated at the outset - that is, what place is there for a multidisciplinary perspective in which sciences of language are included in the analysis of work activities? – I intend to examine those methodological choices that, in MOC, both call my own practices into question, allowing for new ways of thinking about them, and also seem to require that MOC clarifies some aspects of its own position.

It is on this basis that the fundamental proposition of MOC was taken up: "the organizational character of every process of action, the central place of the subject during its development…" (Faïta, Maggi, 2007: 84). This does justice to my point of view that action - the materialization in a specific time and place of what I call activity - is never the result of the output of an isolated, independent operator, who is without traditional, scientific, technical or cultural attachments. The professional act, the craft of an occupation, which is located at the intersection of several temporalities, has meaning for others besides the acting subject, just as it contains a preponderant part of the collective in its singularity. The linking up of such singular and collective acts never ceases to produce a form of organization, regardless of whether it is called a "real" organization; this has the advantage of highlighting its

complexity, since, because it is inherently subjective, it necessarily includes an incompressible or irreducible element of *organizational constraint*.

At a comparable level, this notion of "organizational constraint" (Maggi, 1984/1990: 139-158; Maggi, Rulli, 2012: 7) takes into account the "reduction in the freedom of choice following every organizational choice". This concise formula defines in precise terms the type of causal relationships induced by such "choices" and their objective consequences; it does so, however, without prejudging the orientation of these presumed relationships, the effective weight of the constraint, which has been shown to be variable, or its possible transformations. In effect, every process of action organized in order to transform matter, objects, states or relationships is necessarily defined in time and space by the means it uses, by its designated objectives, and so on: in other words, by "organizational choices", the recognition and analysis of which permit the identification of "elements of constraint in the work situation that explain the consequences perceived by subjects" (Faïta, Maggi, 2007: 77).

Operators who accomplish their assigned work objectives through their individual or collective actions face elements of constraint that limit the free play of their possibilities and modes of action. This is generated by these constraints, but not only by them, for it is also produced in the context of an interaction whose terms are half-objective, because the parameters of their concrete activity have been conceived outside this activity, and half-subjective, because they stem from means and resources that the operators themselves use in order to overcome real problems that always hinder the accomplishment of a task, at least to some extent. These consequences of the constraint under consideration, as I understand them, are therefore two-sided. Experienced as an obstacle by the subject, they already entails elements that can respond to the constraint, because they also reveal how the same subject is capable of finding different responses to the problem he or she is facing. The perception of such consequences would thus give rise to reorganization, even in a latent form. This seems, if you will, an essential point, one that founds both my conviction regarding the communality of our preoccupations and certain ways in which

these may possibly diverge. I will underline how, for an analysis of work activities in which the dimensions of language and the symbolic are priorities, these presuppositions have much in common with the hypotheses of Bakhtin (1929/1977) and of Vygotskij's (1934/1997) cultural-historical psychology, as regards the construction of *meaning* in interpersonal exchanges.

In this regard, a clinical analysis of the activity of welders (Faïta, 2014), carried out with a concomitant organizational analysis of the nuclear industry - each analysis using its own respective methods - provided some very fruitful themes for reflection. For example, two subjects who participated in the study had distinct and even opposing responses when confronted with several elements of constraint (organizational, technical, strictly physical, etc.) (*ibid.*: 23-25). Faced with problems stemming from the tools to be used, one subject took the initiative by employing his ability to perceive and devise new possibilities found on the margins of the tools' limitations: he made a more useful tool for himself (in this case, welding pliers better suited to the gradual mastery of physical constraints undergoing transformation). The other subject approached the situation head-on, taking a critical view of the company's role and its unmet responsibilities: let the engineers, technical inspectors, and toolmakers provide tools to suit the task at hand! Each of these subjects had a different way of identifying the constraint that arose from the intervention of something that prevented them from acting, and one would suppose that the differences in each of their responses existed prior to their identifying the constraint. Further, each subject perceived the consequences of constraint in his own fashion, and thus this aspect can be viewed as an integral part of the work activity. It is clear that the modes by which activity is reorganized are initiated in the constant interplay of a search for balance. These modes are composed of micro-transformations of tools and parameters, workarounds of obstacles generated by work prescriptions themselves, and so on.

The density of the processes of action, interlocking dialogical relations, related developments

It seems incontestable that subjects who participate in the process occupy a single and determinate position in relation to it. This is not only because they are in a maximal proximity to all the dimensions that are in play, but even more because they alone are in a situation of "counter-dependence"[6] vis-à-vis the limitations imposed by constraint. "Counter-dependence" means that subjects, in one sequence of action, are submitted to and transform the choices carried out by others, external and prior to their work activity. At the same time, they act on the potential consequences of these choices when their experience allows them to foresee the negative consequences that can arise from the formal compliance to inadequate prescriptions. The idea that the organizational constraint would have an impact on the details of work seems particularity important, for it provides a way to identify one of the basic elements that provides meaning to each operator's work. The welder, grappling with how slowly the temperature rises as the small power supply heats the electrodes, knows that he is dependent on this tool, on its condition, to carry out this work in accordance with the norms, just as he knows that he needs to verify the state of each electrode. His responsibility in this, as minimal as it may seem, is irreducible and no one can do the job for him. This authorizes him to appropriate *his* own role in the process, *a fortiori* if he infers from this the necessity of verifying the same parameters throughout all of his work activity and in a variety of sequences (Faïta, 2014: 16-18), something that enables us to speak again, as above, of the "meaning" given to work.

It is thus justifiable to state that the subjects of a process are the only ones who can push to its limit an analysis that moves from descriptions of the phases of the process to proposals for alternate organizational choices, while interpreting these constraints as they are being experienced, and that cannot be observed from the outside.

[6] This was the term used by a participant in Faïta, Maggi, 2007: 75.

Similarly, one should consider positively the transformation – what I would call "development" [7]– affecting the acting subjects who are in a position to describe their work, as well as distinguish "the analytical components of the process" (Maggi, Rulli, 2012: 10) and then "to interpret the organizational constraint" in an effort to conceive their work in new ways. For I will certainly agree that, for the subject, describing and analyzing his or her work activity plays a part in renewing how the work is grasped, since the fact of describing it contributes first of all to transforming what is being described. Indeed, as was alluded to earlier, "by being transformed into language, activities are reorganized and modified. They are accomplished in the speech that is addressed to others" (Clot, 2001: 132). It could be added that description undergirds understanding, as Bakhtin's thought and Bibikhin's interpretation of it show. "To understand is to think in a new context", for "a word is not a thing but rather a field that is always in motion, always changing" (Bibikhin, 2003: 147). It thus legitimate, as MOC proposes, that the subjects of the work process are entirely the protagonists of the organization, then of the analysis of the process itself, without excluding its organizational dimension. This touches upon a series of questions deserving a theoretical and epistemological debate.

A point of contention: expertise *at* work *vs.* expertise *about* work

At this stage, it would be useful to examine the main methodological options of MOC point by point, while making every effort not to downplay their organic links to theory and yet also asking whether, as a whole, they might not potentially produce some contradictions with their fundamental expectations. First, however, it is necessary to attend to a matter that, were it to be underestimated, could reduce the utility of the present contribution to the debate. In contrast with one of MOC's stated basic principles, I am convinced

[7] "Human development […] is conceived not as the fulfillment of a preexisting essence, nor as a way of dressing up an initial natural state, but as the *transformation produced in the individual by the construction of new forms of activity* as a result of this same individual's use of available cultural productions…" (Brossard, 2012: 98-99).

that the intrinsic nature of what I bring to the analysis of work activities proceeds from the *intervention* in the workplace. With no intent of summarizing this contribution as being merely an on-demand response provided to a collective of workers, I would say, following Wisner (1995b: 10), that such demands prevent researchers from bypassing the difficulties of reality. For "it is in potentially conflicting situations, where knowledge must be explained through action, that the relationships between the determinants of this action can appear most clearly" (Faïta, Saujat, 2010: 52).

This should not be taken to imply that scientific concepts must yield to pragmatic contingencies, but rather that new *forms of dialogue* between developed theory and concrete, in-motion situations need to be invented; such situations include the ways of thinking about action, mainly by the acting subjects themselves. The problem lies in the fact that these different ways of thinking and expressing knowledge are not necessarily compatible with one another. The researcher, as an expert, has a set of symbolic tools that are adapted to and, to a great extent, produced by his or her practice. The practitioner also has modes of mediation and representation that are quite specific; they are collective products of an experience that itself is collective. The two do not necessarily coincide, but when brought together, there is a risk of reproducing the usual imbalance in the relation between those who possess concepts that are considered suitable and those who do not.

In general, the workers involved here are perfectly capable of demonstrating that they can express themselves in a way that meets the implicit expectations of researchers and other experts. A series of dialogues between welders and researchers, and in particular two welders whom I will refer to as *W1* and *W2* (Faïta, 2014) provides interesting examples of this (see below). It seems possible to suggest that the researcher's relation to the workplace proceeds from an *intervention* that is, by its very nature, external to the work, and the effect of this intervention ought not to consist in taking the analysis of work away from the subjects who carry it out. Instead, it should involve engaging in a dialogue; at the end of this dialogue, the situation and its

participants will be objectively transformed, with each of the participants seeking to give a meaning to his or her activities in the other's eyes. Let us conclude this point by citing Jérôme Bruner's (2000: 94) remark: dialogue is "everything that makes the meaning of a discourse something other than what can be derived from language".

Description, interpretation, analysis

The *a priori* position, which I will consider indisputable, that acting subjects are the only ones who can analyze and evaluate appropriately the work process that concerns them, is logically expressed in these subjects' ability to describe, then interpret, and then evaluate the work process, to the point of identifying "alternative processes" for each component analyzed (Maggi, Rulli, 2012: 12). However, and this is completely consistent with the above, it must be asked whether these concepts are congruent with their operational expression. What does it mean to "describe", especially when an activity, rather than an object, is being described? Other questions arise immediately from this: who is doing the describing and from what point of view, and by means of which instruments? It seems that, in this context, the question can be asked in two ways: first in strict relation to the realm of the analysis of work and then contextually, in relation to the overall consistency of MOC.

A first problem concerns the presumed nature of the activity of describing, to return for a moment to my own conceptual universe, in which the narrative - for, as it happens, that is really what is involved here - cannot be considered a simple verbal (or, more broadly, symbolic) counterpart of non-verbal actions. Let us refer to the text of the study on the work of welders (Faïta, 2014). The subject *W1*, who is being filmed in a work situation that has been chosen in consultation with the researchers, is involved in his narrative, describing what he is doing. "The film allows us to see that, at a certain moment, *W1* stops what he is doing, leaves his workstation, takes a few steps (for a duration of 55 seconds), returns to his initial position without starting to weld again, all while looking at the component. His inaction continues for

several minutes longer. This event leads us to question him, to request an explanation. *W1* hesitates and does not seem able to reply. Then, when he sees himself handling the thermometer, he speaks of waiting for the temperature to go down. Next he gives another explanation involving the evenness of his weld (avoiding having different levels on either side)" (*ibid.*: 8). Logically, it would seem that events that are so distinct in physical, temporal and spatial terms could be described without much difficulty, but this was not the case. At another moment, *W1* runs up against the researcher's obvious failure to grasp what he was saying (*ibid.*: 8-9). He attempts to explain what he was doing, to present the rationale for his different choices: not to leave any gaps between the weld beads, in order to prevent ripples from appearing in the resulting surface. However, this digression leads to another: that precaution means that the starting point of the new bead that is supposed to prevent a gap has to be at a specific place in relation to the first one, at the highest point. In a new shift, *W1* experiences the unavoidable accumulation of difficulties inherent in the task: describing, explaining and interacting with another person by using nothing but the *medium* of words, despite being filmed. He then moves around and tries to draw a picture on the board, to give tangible form to the physical reality, the needed action and the operational mode, taken together. *W1* achieves this, after taking an inventory of the required semiotic resources (i.e. graphic and verbal, which were associated in this instance) and making a choice. It is essential to remember that narrative itself, as an activity in the full meaning of the term, cannot do without the multidimensionality of the actions of work, both as regards the order of sequences and space and the explicit and implicit rules of the activity, whether these are followed or not.

Further on, in the course of the dialogue, the question of rules comes up once again (*ibid.*: 27).

W1 - There are rules we have to follow, rules set up by the client and also by our engineers; the engineer decided when to do the tests; they make the instructions, and then we have to apply those instructions, not do what we want; there are specifications for the amperage, the voltage, the temperature, all sorts of things that have to be followed.

In reply to a new question:

W1 - No, I'm the one who decides about the time, because I see what I can do and what I can't, there is no set time, I manage the time myself, like for cleaning, […] I manage that myself, if we need to use the mill or to ream it a little, it's me who decides to do a little more or not…; it depends on the person, there are some people who weld without cleaning, it's different from one person to the next… maybe a little brushing, and that's enough… to have more safety, a bit of work with a reamer with burrs, that's always better…

There is clearly a contradiction here: respecting the "time" is subject to mandatory instructions that are, however, seemingly "managed" on an individual basis, depending on the "person". It can also be noted that what *W1* was saying at that moment expressly contradicted what he said at other moments. Even more, a close examination of the activity as filmed shows that nothing was less unimportant than the time constraints, at each phase of the process: it is enough to return to the prior sequence, in which *W1* lets time pass while he checks the thermometer, thus referring to a completely objective measurement. The relation between the lapse of time and variations in temperature determines the successive micro-choices and organizes the welder's activity. His actions take form and are linked together in response to this type of constraint. Yet it is more important to ask oneself what the real object of his narrative is: is it to make a *report* about the process of action? Is it to get the researchers to grasp the work in its detail, a necessity if they are to acquire any sort of serious understanding of the process? In any case, it should be acknowledged that what provides meaning is not the terms of the narrative (or the "description"), but rather how it is conducted, including interruptions, observable contradictions and what is left "unsaid".

This leads to a question already formulated elsewhere: does a "description" exist outside a rhetorical point of view, that is, as a normative principle that constitutes a reference that is necessary but inevitably misguided? Or again, more clearly, is this not, for a researcher, the point of departure for establishing a new relation to the actions performed, as is the case for

observation in ergonomics? Initially, and still from my perspective on the analysis of activity, it is interesting to consider whether the operator *W1* may be engaging in a dialogue with himself. All the symbolic instruments that he chooses to mediate his point of view (words, sentences, stylistic devices, body language, etc.) structure his thoughts about the multiple determinants of his activity, which he may not yet even have had the chance to undertake. In other terms, he discovers what he is really doing by providing himself with the means to say it. It could be added, and his words reflect this, that he brought up the constants and the variables of his profession, in a classical manner, or the different ways of resolving the same professional problem.

This question seems to be as follows: shouldn't we maybe consider the indispensable phase of "description" as the initial moment of a process of reflection in which acting subjects confront an unexpected difficulty, namely, the incommensurability among ways of thinking about and representing work, depending upon whether the point of view that is adopted is theoretical, technical or intrinsic - whether it is inherent in knowledge that is enacted, or whether it is individual or part of a common heritage?[8]

Reading the texts that form the present debate leads to an initial question: can it be maintained, firstly, that "in the presence of a good description, even a subject on the outside can reflect on the outlines of the process of action and the alternative choices. Certainly, such an exercise would not have the value of an interpretation made by the subjects involved, an interpretation that both transforms the process and introduces change" (Faïta, Maggi, 20017: 73)? Another question has since emerged: can it be even envisioned to base the approach on this succession of description/interpretation, when, for the acting subjects themselves, these two phases are obviously one and the same, given that, as I would maintain, the subject's narrative has a transformative value?

[8] Some texts in work sociology considered, several years ago, the problem of the nature and grounds of *workers' knowledge* (see Ruffier, Blaise, 1990).

Could we not, as least hypothetically, envision an approach in which the object of research would be a confrontation between the subjects' representation, including their interpretation, of their process of action, and the results obtained by external experts or researchers who investigate the same work process? This would be a scientifically productive way of taking account of the researcher's objectively unavoidable externality to the concrete process of work. The product of this confrontation would seem to offer the basis for a reflection of a higher order, where unexpressed knowledge could clear a path and enrich the inventory and the formalization of alternate choices, without simply reinstating the inherently reductive imbalance in the relationship between experts and operators. In this sense, the succession of "narrative" and "interpretive" actions that issues from subjects would form the initial phase of a dialogical relationship that would bring the protagonists together and confront the results of their respective activities: for the operators, reflections on their own work activities, and for the researchers, an effort to understand the means used in these reflections and their aims. In this way, operators would submit themselves to the test of "re"-thinking their work, while researchers/experts would have to open up their concepts and methods to the exigencies of reality as it is encountered.

Conclusion

This brief contribution, which is structured around the existence of complementary positions identified in the course of several actual collaborations, has focused on the instrumentalization of an approach according to which the workers' involvement represents a cornerstone. However, it has left several important questions unanswered, which justify further and even larger debates. The theme of risk prevention, in connection to alternative organizational choices, should be left to those who are more qualified on the topic, as well as Maggi and Rulli's (2012: 9) issue concerning the "training enacted by and within the work process, by its analysis needs". This is probably a key and particularly pressing question, because the relation

between the urgency of soliciting the assessment by the acting subjects for new work design, and the conception of the necessary resources that the interested parties can appropriate, becomes very evident within a newly motivated pluridisciplinary strategy. From this perspective, the "Organization and Well-being" Research Program offers alternatives that spur the continuity and development of collaborations to which it provides rigorous tools.

On work analysis for prevention

***Bruno Maggi**, Università di Bologna*
***Giovanni Rulli**, Direzione generale ASL di Varese, Università dell'Insubria*

Introduction: the themes of the debate

The introduction to the work analysis approach for prevention which characterize the Interdisciplinary Research Program "Organization and Well-being" (Maggi, Rulli, 2012), fundamental reference for this debate, describes an example of analysis of a work situation, summarizes the theory and method that guide the approach itself, and finally asks three questions.

The example of analysis concerns a territorial health service in the north of the Lombardy region, specifically a service of public hygiene and health. Such example seemed to us particularly significant because of its features. On the one hand, it clearly shows that the analysis of work processes, including the well-being of the involved subjects and the changes induced in such processes, was executed by the subjects themselves, employed in the service: a dozen of people including physicians, nurses, chemical experts, engineers, technician of prevention and administrative personnel. On the other hand, the example shows that the analysis and the subsequent changes of work process have developed over two decades, also considering the transformation of the health service activities implied by the law: this was possible because the subjects, who acquired the necessary knowledge to perform the analysis, were able to develop their own competences, including the approach for the analysis and the transformation within their own daily work.

The theory upon which the approach is based on has the following distinctive traits. It presupposes the epistemological orientation that overcomes the objectivism/subjectivism dilemma. Every human action, as a social action, is viewed in terms of process of actions and decisions, in continuous development, always in relation to other processes carried out by the same

subject and other subjects. The organization is viewed as organizational action, the regulatory aspect of processes of social action. The acting subjects cannot be separated from such processes: they are at the center of them, they participate to their design and their development. The well-being of subjects cannot be detached from the goals, from the regulation and the assessment of each process of action. The method derived from this theory allows to connect the analysis of the organizational choices of the action processes (in particular, the work processes) to the analysis of the consequences of such choices on the involved subjects' physical, mental and social well-being. Thus, prevention goals may be pursued, together with effectiveness and efficiency goals. This is specifically outlined in another text to which references have been made in the debate, concerning the analysis of a welding work process in a nuclear engineering context (Maggi, Rulli, 2014).

The research Program "Organization and Well-being" does pursue indeed the goal of primary prevention, that is, the prevention aimed at avoiding risks at their source, which is also prescribed by European norms concerning the promotion of workers' health and safety. Especially in relation of the ever increasing rates of accidents in the workplace and professional diseases, without forgetting the suicide cases, we asked three questions. Is it possible to achieve high levels of prevention if the ways to conceive the processes of work action and their regulation are not adequate to identify within organizational choices the sources of risks and damages? Is it possible to support the participation of workers, or even more make them the protagonists of work situation analysis, if the latter are always performed by a researcher observing such situation from an outsider's point of view? Is it possible to fully interpret the many components of work reality, usually studied by different disciplinary perspectives, without trying to build theoretical frameworks that, beyond a simple dialogue between disciplines, may actually propose joint visions?

These questions are obviously directed, in the debate text, toward the disciplines that are concerned with work, from occupational medicine and labor law to work psychology and sociology, ergonomics, specifically the approaches

aimed at the improvement of work conditions and at accepting the workers' perspective. Six scholars, representing different disciplinary points of view and approaches with such goals, accepted to answer to these questions. The outcome is a high level debate, of which we are very grateful to the participants.

In the following pages we will react to these answer by proposing for each question our own point of view. Since we already worked on some of the issues raised in the debate in previous publications, we will cite them in order to help the reader to find more details about what here will be described in a necessarily brief way. Obviously, the reactions concerning the methodological and theoretical framework have to be attributed to one of us; the reactions concerning the connection of the biomedical interpretation with the interpretation of the structuration choices of the process of work action have to be attributed to the other; the reactions about the method and the cited analysis of work have to be attributed to both of us.

Organization

The question about the way to conceive the organization, in general and, more specifically, at work, has been tackled by all comments, in different ways, which is enriching for the debate. However, there are shared aspects.

A shared aspect concerns the recognition of the relevance attributed to the organization by the discussed approach and, with some minor differences, of what this approach means by organization. According to the commentary from the point of view of work sociology, our approach conceives organization as the "regulation aspect" of the social action process, as "organizational dynamics" in relation to the well-being of the subjects involved. According to the commentary from the point of view of work psychology, organization is in our approach a "regulation process", which does not separate the stakes of health and production. The ergologic point of view underlines the correspondence with the concept of "regulation". The point of view of the linguistic activity emphasizes the "organizing character of every process of

action", as its unavoidable and irreducible constraint constitute the "fundamental object of analysis". Both the ergonomics and work psychodynamics points of view recognize that this approach overcomes the fixed, unchangeable work organization of the tayloristic vision, and that it aims to well-being.

A second common trait among the comments concerns what is meant by organization according the respective points of view. It seems, sometimes explicitly, sometimes implicitly, that the "organization" is seen as an ancillary aspect of work activities – and maybe exclusive of work – which is added to other pre-existing aspects. It seems separated from the choices about places, physical conditions, materials, tools, time and space management, indeed everything that can only be the outcome of a human choice, *a choice that organizes*, in one way or another, the process of work action. This is actually similar to the widely spread idea of organization, which also generally shared by the disciplines concerned with work, not only those represented in these comments but, first and foremost, by labor law and occupational medicine. We already made this argument in different occasions (*e.g.* Maggi, 2008), and we believe that this reductive idea of "work organization" may hinder the understanding of both the choices that imply negative consequences for the well-being of involved subjects, and the alternative, more desirable choices.

The process of action

It has been emphasized that, in our view, the organization is the regulation aspect of the processes of social action. The commentary from the sociological point of view correctly recognized the reference to Max Weber (1922/1980) in the definition of action: action has *meaning*, and it is *social* because it is *oriented toward other subjects* according to the *intention* of the acting subject. It should be added, again in reference to Weber, that it is a *process* of action, a *development* of action. Time is intrinsic to the process, it is not an external variable. Action is not identifiable through a beginning and an end. It is not the consequence of a decision, which is, instead, a component of action

itself, distinguishable but not separable from it. The process of action is not a "sequence" of facts, phenomena, concrete activities or, worse, of tasks. We emphasized many times that "action" and, similarly, "activity", can be conceived according to antagonist, incommensurable epistemological presuppositions, while theories of action and theories of activity may be epistemologically compatible. This is also shown in a collective text where several authors contributed (Maggi, 2011); some of them also participated to this debate.

Our theory presupposes *a third epistemological way*, which overcomes the opposition between objectivism and subjectivism, as well as the dilemmas that derive from it. Thus, is it with these presuppositions that the *process of action* and its *regulation* are conceived.

Regulation

A passage in the introduction of the new edition of a book of ours (Maggi, 2003/2016, Livre I: 2-3) may be helpful: allow us to quote it. "Why have we called this point of view *theory of organizational action*? We believe that human action can be really understood only with the interpretation of *the way the process of action is produced and developed*, which is its *regulation*, just like the *rule of action* is its way of being produced and developed. Inspired by a great tradition of the philosophy of law, we have distinguished the level of "being" from the level of "having to be". Consequently, our point of view distinguishes the rule of action from the normative prescription, as well as the regulation from any form of normalization. Our theory is hence confronted with a wide range of theories concerning the regulation of human action, from the generally theories of law to the majority of organizational theories. Now, since the "organization" is conceived in different ways, our point of view is opposed to the theories that present it as an "entity", whether "predetermined" in relation to the acting subjects or "constructed" through their interactions. We refer to those theories that conceive organization as *action-that-organizes*, to the interdisciplinary reflection of organization that generated a theorization

allowing to conceive action and its regulation in terms of action and decision process. By following this reflection, the action process and its organization are not separated "entities": the expression *organizational action* emphasizes that the process of action exists only because of its regulation".

Some clarifications triggered by the comments on our approach are necessary. First, it seems to us that disciplines or approaches concerned with work should not ignore the existence of a large theoretical production such as that on organization, which is related to work anyway; especially if a certain approach declares to consider all the disciplinary knowledge concerning work.

Also, it would be better to avoid equating the regulation of human action to the regulation of living organisms, as suggested by the point of view of ergology. In a biological organism, at every moment of its evolution, the goal of its regulation is the homeostasis, but certainly this is not true for human action (no matter how it is conceived). It is worth remembering that on an organicist vision, derived from medicine and biology, was founded the functionalism of social sciences, that is, a representation of human activities that does not appear to be fitting to the points of view that are expressed in this debate. It would also be better to avoid the notion of "adjustment" to indicate the regulation of human action as a whole; the adjustment of a rule in a process of action is just a particular aspect of its regulation, while in an organism, or in a machine, it is "the" regulation, which concerns the mode of functioning of subsystems in order to allow the system to reach its equilibrium and its best functioning level "according to the norm".

The comment from the sociological point of view rightly observes that our idea of regulation is different from the one proposed by Jean-Daniel Reynaud (1979; 1988). We already discussed Reynaud's "social regulation" and the way it differs from the conception of his mentor Georges Friedmann (1946), and the deviation from the Reynaud's theory within its own tradition, in the theories proposed by Gilbert de Terssac (2011) and Jens Thoemmes (2011), in a publication edited by the latter (Maggi, 2015). We would like to remind that, on the one hand, we appreciate in Reynaud's thought the opposition to the

functionalism of Human Relation, and especially his contribution in freeing of the organization studies from the deceptive "formal/informal" dichotomy. On the other hand, it seems to us that several aporias compromise the path indicated by this author: the confusion between "social" and "collective", which leads to exclude from his theory the ability to understand the regulation of the social action of a single subject; the consideration of conflict as the external source of the regulation process, which implicitly denies the regulation of conflictual action, one of the modalities of social action; the lack of a definition of the concept of *rule*, which seems to be seen as "imposition on action", separated from action, according to the functionalist heritage.

From regulation to organizational constraint

We define, once again, the *rule of action* as *its way of being produced and formed*, and *regulation* as *the way the process of action is being produced and developed*. The regulation of a process of action may include rules that are formal or informal, explicit or tacit; rules that the subjects are aware on unaware of; and also that *precede* action, or *contextual* and *intrinsic* to action. This concerns the "modal variability". As far as the "variability of the production source" of action rules, *autonomy* and *heteronomy* are always present, at different decision levels, within the development of every process of action. The rules that precede action, both autonomous or heteronomous, are always re-elaborated, changed, sometimes eluded, and always completed by the contextual regulation, necessarily informal, tacit, even unaware, and evidently autonomous. (All this is largely described, even in relation to coordination, cooperation, power, in: Maggi, 1984/1990; 2003/2016).

Some analytical criteria may be derived from this framework, allowing the *evaluation* of the regulation choices. Such choices are enabling, toward the achievement of expected results through instrumental actions, and at the same time constraining, as every choice restrain the subsequent ones. Thus, we have

proposed a stipulative definition [1] of *organizational constraint*: the *reduction of the freedom to decide* which is implied in any regulation choice, therefore indicating the conditions that may generate risks and harm for the acting subjects. The organization, as we conceive it, is then a *resource* and, at the same time, a *constraint*, which can generate negative effects of the *physical, mental and social well-being* of subjects in any process of action.

The subject of the analysis

The comments representing the different points of view show significant similarities even in the answers to the question concerning the position of the researcher and the workers in the analysis.

According to the psychological point of view, in particular of activity clinic, the analysis is "jointly executed" with the workers; it is founded on a "cooperation" between the latter and the researchers, while it is not shown in our approach "how those who intervene are positioned". According to the sociological point of view, in our approach there is truly an "integration" of subjects in the analysis, but also a "dependence of the subject from the position of the researcher", in "learning", in the "production of knowledge" and in the "actual regulation of the process". According to the ergological point of view, neither the researchers nor the workers can ensure, by themselves, the understanding of work; the production of knowledge on work requires a "dialogue" and a "comparison" between disciplinary knowledge and the knowledge of the protagonists of human activities, and the analysis cannot be performed without "antecedent conceptualizations proposed by the researchers". According to the ergonomic points of view, workers' participation to the analysis is a "widely accepted principle", but these subjects "do not have the competences" to analyze and design work; one cannot "do without

[1] We recall – following the epistemologist C.G. Hempel (1966) – the distinction between a "descriptive" definition of concepts, which specifies an accepted meaning, and a "stipulative" definition, which builds a new term within the framework of a theory. The concept of *organizational constraint* is part of the elaboration of the organizational action theory, therefore its meaning is based on its relationship with other concepts of the theory.

intervening researchers", whether they are seen as "experts on human work" or as researchers "operating for the construction of a discussion". The point of view of the linguistic activity differs from others when it deems to be "justified", because the subjects of the process of action are at the center of its development, to consider them "entirely as protagonists of the organization, and then of the analysis of the process itself"; but it argues that "the analysis proceeds from the intervention", where the researcher, far from "confiscating from the outside" the analysis of work, is "committed to a dialogue".

Thus, these answers to our question confirm what we always thought and wrote in the text representing the first reference of the debate (Maggi, Rulli, 2012: 8; 20-21): the "participation" of workers to the analysis, or even the idea that they are the "protagonists", has been asserted, but the real protagonist is always a researcher, external to a reality of which he claims to be "an expert" of and on which he authorizes himself to "intervene", or he is committed, in many ways, to understand. However, our goal in this debate is not to criticize other approaches, but on the contrary to learn from it and to take any suggestion in order to better propose our approach. Therefore, let us try to clarify those aspects that may not appear clear if one assumes other points of view.

A few clarifications

First, it may be useful to specify the characters of the research Program "Organization and Well-being". It is a *research program*, not a group or a research center. Like any research program, it is defined by its goal: to identify the relationship between the choices that constitute the processes of work action and the involved subjects' health, conceived in terms of physical, mental and social well-being. Aiming to this goal, the Program's activities are studies, both theoretical and empirical, discussions, debates (such as this one), publications. There are no "interventions" on work processes that are not analysis performed by the implied subjects. During three decades several dozens of researchers have participated to these activities: physicians, jurists, economists, sociologists, psychologists, ergonomists, engineers, architects; but also prevention operators,

workers, business employees and managers, unionists. As one can verify through the publications, the participants to the activities of the research program have been interested to the program's goal, but according to different points of view, even contradictory ones. The theory and the method at the origin of the program are not necessarily shared by the participants.

The method is continuously tested in the analysis of very diverse processes of work action. It allows the evaluation of processes of action by focusing on the *congruence* of the choices that shape them: choices about the expected outcomes, the instrumental actions and the regulation. A clarification may be useful about this. We meaning method in the proper connotation of the term[2]: it is the *set of analytical criteria derived from a theory*, that the theory provides to observe and interpret a field of study. In the current language the term "method" is also used to indicate the tools for gathering and elaborating data: numerous and different forms of observation, query, analysis of documents; but it would always be better not to mistake the empirical research tools with the part of the theory allowing to utilize its concepts and hypotheses[3].

Very often authors do not declare the method derived from their theory. We did in detail (Maggi, 1984/1990: 103-126; 159-177), for two reasons. On the one hand, subjects in any action process may learn the analytical criteria and appropriate them, and by consequence they may interpret the choices that structured action process that concerns them, as well as identify alternative choices that are preferable. On the other hand, the method provides a theoretical foundation to those with the competence to interpret the consequences of such choices on the interested subjects' well-being (first and foremost the occupational physicians, but not only). We discussed the help to

[2] According to the *Dictionnaire historique de la langue française* (Rey, 1992), the original meaning of *method* derives from Greek and Latin: "way to leads to the goal", "path to be followed".
[3] For example, one should not mistake the research instrument called "self-confrontation" with the different methods that may use it, although adapted, within the framework of different theories, as it happens within the "theory of the linguistic activity" by Daniel Faïta (2011) or within the "theory of the activity clinic" by Yves Clot (2011).

learning and the relationships between learning, work analysis and change (Maggi, 2010; 2003/2016, Livre III: 37-68).

In work situation this method allows workers to reconstitute a competences of which they have been disowned by the "revolution" of Frederick Taylor. The "theft" of the "blue collars' knowledge" could not concern the competences about the job. It is necessary to read carefully Taylor's texts: (1903/1947; 1911/1947; 1912/1947)[4]: the goal – achieved – by his theory was to *subtract from the acting subject the competence about the regulation of process of action*. If one wants the workers to become the protagonists of the analysis and the transformation of their work, it is necessary to help them to develop again such competence. This, according to our approach, cannot be realized through a "dialogue" between different kinds of knowledge, not matter if it is induced by the researcher's need to understand, or by a "militant commitment". On the one hand, the knowledge at stake, it was said, is the one produced by the theorization of organization. On the other hand, what makes possible for the workers to learn the analytical criteria is an epistemological posture, a "way to see" which implies the action of the subject as process of actions and decisions and the centrality of subject in the process, particularly in its regulation.

Interdisciplinarity

The comments on our approach differ, in the discussion, about the third question. Some refer to the organizational action theory, and propose a critique

[4] The goal of Taylor's theory is to overcome the work practices of his time, characterized by significant differentiation, learning based on personal experience, direct hierarchical control. He proposes a different modality, based on a "mental revolution", of which he demonstrates the effectiveness. Scientific management, or task management, is developed through the construction of the task, the creating of programing, the separation between managerial and operative work, between primary and secondary flows of operation (of supply, control, etc.). The main tool is the *procedure*. All this is described in detail in Taylor's works. Later, taylorism – which should not be mistaken with Taylor's theory (*e.g.* Maggi, Solé, 2004/2007) – was significantly transformed by the new "revolution" claimed by the Human Relations, up to the more recent ones made possible by the information technology, but the fundamental problem is unchanged.

of the notion of interdisciplinarity, others refer instead to the approach to work analysis for prevention, and propose the possibility of synergies. Thus, let us tackle these two different aspects of the discussion.

What is interdisciplinarity?

According to both the sociological and the ergological points of view, the organizational action theory is not interdisciplinary but "undisciplined". This appears to be justified, according to the first point of view, because what matters for this theory is the "orientation", not the disciplinary references. What can be seen in this theory is the "substitution of disciplines with the unicity of the theoretical framework". According to the ergological point of view it is necessary to abandon the term "interdisciplinarity" and just use the term "pluridisciplinarity", hence distinguishing "cooperative pluridisciplinarity" from "integrative pluridisciplinarity". The former designates a collaboration, limited in time, between different disciplines, where each one provides its own contribution while remaining separated from the others. The latter is activated by a "new object" requiring "new methods and conceptualizations", in "rupture with existing disciplines". Here we can talk about "indiscpline", and ergology, which doesn't wish to define itself as a discipline, would be a good example of it, even though in this case a new discipline "tends unavoidably to constitute itself". Does the theory of organizational action have the "same nature"?

We have described the characters of our theory, and we depicted it as interdisciplinary by utilizing this term to qualify a *theoretical framework whose construction incorporates contributions from different disciplinary fields*. First of all interdisciplinarity, as we conceive it, and in particular as it relates to our theory, is based on an *epistemological coherence* of contributions, concepts and hypotheses, coming from different sources. The construction of an interdisciplinary theoretical framework also requires as a starting point a *research problem*, not the disciplines. Finally, an interdisciplinary theoretical framework requires *unity*: the contributions to it are inter-connected and re-

elaborated to form one united product, with a new statute, which proposes an interpretation of a different order in comparison to the disciplinary interpretations (Maggi, 2003/2016, Livre III: 102-104). We also commented the costs, the difficulties and the advantages of a theoretical construction with these characters: it lacks the reassuring protection of the disciplinary institutionalization, but it allows to look in a different way, and maybe to grasp what is missed by the established points of view.

The use of the term "interdisciplinary" seems justified to us, especially because the theory of organizational action is founded on strong theoretical proposals, such as those by Max Weber, Herbert Simon and James Thompson, who claim explicitly their interdisciplinarity[5]. However, we don't want to insist too much on the term, so one could indeed choose "indiscipline", just also appears amusing. It is the characters of the theory that are interesting to us, and allow other levels of interdisciplinarity (or of "indiscipline"). On the one hand, the theory of organizational action, by proposing the regulation of social action as its object of study, proposes at the same time the need for inter-theoretical encounters for the interpretation of the various forms of social action (economic, juridical, political, sanitary, educational, etc.). On the other hand, since according to our theory the study of the regulation of social action includes the well-being of acting subjects, a connection with the knowledge coming from the biomedical, psychological, sociological, engineering, etc. fields is proposed: which is made possible by the concept of organizational constraint.

We hope that we have been able to clarify that the theory of organizational action is neither a discipline, nor is part of a discipline, its object – the regulation of social action – is not a "new object" but a very ancient one,

[5] It should not be necessary to remind about neither Weber's competences and contributions in the various fields of human and social sciences, in the epistemological reflection, nor about Simon's competences and contributions recognized with the Nobel Prize, awarded to him for a clearly interdisciplinary theory. Thompson (1967), in the introduction to his work, claims that his goal is to overcome the divisions between disciplines that, just like economics, political science, sociology, social psychology, separately generate a reflection on organization.

but seen differently, and finally that the "indiscipline" of the theory cannot be separated from that of the proposed approach to work analysis for prevention.

A possible synergy?

We now orienting our reflection to the comments that refer to our approach and envision synergies. According to the ergonomic point of view, our approach provides the "opportunity of interdisciplinary synergies" to the approaches pursuing the improvement of work. Synergies are necessary to ergonomics, which could "receive", through our method, "the theorization and the methodology of organizational analysis".

Now, we read this statement with great interest, as the need for ergonomics of a reference to the theorization concerning the organization constituted the theme of our invited conference to the 30° Congress of the Société d'ergonomie de langue française (Biarritz, 1995). That conference was later published in a volume edited by Jean-Claude Sperandio (1996), then, in an extended version, in the *Traité d'ergonomie* edited by Pierre Cazamian, François Hubault and Monique Noulin (1996), and finally it was also published as a chapter – mostly addressed to ergonomists – in one of our works (Maggi, 2003/2016, Livre II: 37-69). At that time our suggestion was not acknowledged: it came, indeed, from an unknown world, the one about « organization », almost exclusively seen under the appearance of the tayloristic task, something to be fought. And even in recent years, of one may judge based on the proceedings of Self, the attitude of ergonomics toward the organization seems to oscillate between the pretense of treating the theme in self-referential terms and acritical borrowings from managerial fashions. For these reasons the point of view expressed in this debate seems to be very relevant.

Evidently, our suggestion, oriented towards ergonomics, to commit to knowing the theoretical production on organization, did not refer to our theory twenty years ago, and doesn't refer to it now. What is missing in ergonomics – but, as we have soon, not only in ergonomics – is a reference to this vast production, where it is not easy to navigate indeed, on the one hand because

different disciplinary perspectives, as well as "non-disciplinary" ones, participate to it, and mostly, on the other hand, because different epistemological postures are presupposed, sometimes in complete contradiction with the goals of ergonomics[6].

However, the fact remain that our method has been proposed, in a detailed way, so that it could utilized by people to whom one cannot ask to study the organization theories: first of all, the workers. But if the subjects of the processes of work action may use the method to analyze and transform their own work, physicians have been using it for a long time to analyze the consequences of the organizational constraint and to act for prevention, and also by engineers and architects to improve the design and use of tools, machine and workplaces, and finally by workers representatives to support their demands[7]. The outcomes are certainly not the possible best ones, but quite satisfactory nonetheless. Why this should not be interesting for the ergonomic approaches? And why this should not be interesting for other approaches to work analysis as well?

Other synergies?

The comment from the point of view of psychology, of activity clinic, argues that indeed an "interdisciplinary complementarity" would be possible; "the method of organizational congruences and the methods of activity clinic" (or instead the *method*, singular?) propose "complementary resources". The comment from the point of view of the linguistic activity emphasizes very relevant aspects in the relationship between "constraint" and "consequences perceived by the subject": this relationship is crucial for possible synergies, and its understanding may receive from this point of view a significant help.

We definitely share the hypothesis of a fruitful connection between our method of organizational analysis and the methods (not the research tools) of

[6] Let us remind that we also discussed this theme, with Gilbert de Terssac, in a chapter of a volume devoted to an epistemological debate on ergonomics (Terssac, Maggi, 1996).
[7] See the themes of the seminars and the list of publications of the Interdisciplinary Research Program "Organization and Well-being".

the activity clinic and the linguistic activity. And we would like to try to develop a little bit such hypothesis. First, it seems essential to understand that the description of the work process, the interpretation of the elements of the organizational constraint generated by the choices of the process, and the identification of alternative choices, are not phases chronologically separated. From the point of view of activity clinic it has been underlined that it is a "distinction of what is interrelated in the analysis", and one of our statements was quoted: "the description and the interpretation are directly connected, one feeds the other" (Faïta, Maggi, 2007 : 88). From the point of view of the linguistic activity it has been added that the subject, by describing and analyzing his/her own work, reiterates his/her own conception: "description supports the understanding", and for the subject this is already a transformation.

Once this is clarified, how a synergy between the organizational analysis and the psychological analysis, and the analysis of the linguistic activity, can be developed? In the activity clinic – we read in the comment – the analysis concerns "representative situations", not an "exhaustive description" of the work process. The choice of such situations stems from the dialogue between workers and researchers-clinicians, and this dialogue, if we understand correctly, is guided by the method (that is, by the theory) of activity clinic, which evidently later also guides the analysis, a sophisticated psychological analysis of which a nice example is described in the comment.

Why then the choice of the situations to be submitted to the psychological analysis, and evidently the dialogue between workers and researchers that generates it, could not be leaning on an organizational interpretation of the work process as a whole? The method of our approach implies exactly this kind of possible connection. The organizational analysis extends itself to the identification of constraint elements, and of alternative choices that may transform the constraint. Then, it is the inputs from different fields of study that contribute to the interpretation, according to their competences, of what is derived from the organizational constraint for the subjects involved, and to the

activation of initiatives aimed at modifying the work situation. From the proposal of our method this type of connection is pursued through an approach of occupational medicine (Rulli, 2010; 2014), as one can verify in the cited examples[8]. In the text in which our approach is presented we already express our wish that this can be also realized with the contribution of the activity clinic.

Now, it's exactly about this relationship between the organizational constraint and what follows (or may follow) its identification that the point of view of the linguistic activity suggests new reflections. Organizational constraint (singular), as we have seen, is the *reduction of the freedom to decide* implied by a regulation choice. It has nothing to do with the generic "constraints" (physical, psychological, etc., to which eventual "organizational" ones are incorrectly added). The point of view of the linguistic activity recognizes that the *elements of constraint* concerning a process of work action are identified by the organizational analysis, and that they explain the consequences perceived by the subjects. The identification of elements of organizational constraint, hence, is not the outcome of an hypothesis based on the consequences perceived by the subjects or the damages of which they are the victims, like in the inverted pathway of the traditional occupational medicine or other disciplinary approaches. But from the point of view of the linguistic activity is also observed, on the one hand, that the perceived consequence already implies parts of responses to the organizational constraint and, on the other hand, that the perceived consequence "differs from one subject to another"[9].

[8] In the cited case of the health service (Maggi, Rulli, 2012), the implied subjects, physicians and prevention operators, after their analysis of their own work process, develop themselves the analysis from a biomedical point of view; in the case of the industrial welding (Maggi, Rulli, 2014) a physician develops the second part of the analysis based on the organizational interpretation as proposed by the workers.

[9] This observation is based on an analysis about the welders' activity (Faïta, 2014) performed in parallel to the cited analysis of the welding work process. The company's management had requested at the same time both studies, which allowed to compare the results of the two approaches.

Thus, the analysis of the linguistic activity sheds light on an aspect of our approach that should be considered. The two cases of analysis cited in the debate show that a group of physicians and prevention operators in one case, and two welders in the other case, performed their analysis collectively, discussing between them. This strengthens the analysis, but at the same time possible discrepancies between the subjects' interpretations escape the collective "narration". The understanding and the interpretation of the action process may indeed be different among subjects, as the perception of the organizational constraint's consequences may differ as well. Therefore, why it couldn't be the analysis from the point of view of the linguistic activity, by revealing the subjects' different reactions to constraint, to provide an added value to the global analysis? This what we have been wishing for a while now.

The suggestion, however, of a "comparison between the subjects' representations of their action process […] and the outcome of the investigation by the external experts, or researchers, on the same work process" requires a clarification. Any comparison concerning the *consequences* of the organizational constraint, either objective or subjectively perceived[10], is certainly useful, and it may nurture a "dialogic relationship" between workers and researchers whose contributions may be situated following the organizational analysis (be them physicians, sociologists, psychologists, ergonomists, linguists, etc.). But the organizational analysis, according to our approach, is only performed by the subjects of the work process concerned. There is no researcher in the proper meaning of the term, but a "methodologist" helping the workers to learn and appropriate the analytical categories of the regulation of their action process. Every researcher who wish to interpret the regulation of others' action process unavoidably places himself among the so called "organizers" whom, once they have become "experts" thanks to the tayloristic investiture, presume to master what they cannot have competence about. Whole libraries of studies on work

[10] For example, as the biomedical knowledge proves, the perception of a risk or a damage may not correspond at all to what a subject actually experiences. A simple case concerns the perception of effort to lift a heavy object in relation to its effect on the spinal column.

show the damages of this pretense. The challenge of our approach is to help the working subjects to reconstitute their "stolen" competence about the regulation of their own action processes.

To continue the discussion

We are not the best judges in order to evaluate whether our challenge has been won. That's why we desired and appreciated this debate, and we hope it can continue. We know that it is not easy to compare different points of view because, as it was said in the Middle Age, *quidquid recipitur, ad modum recipientis recipitur*. Some answers to our question show that, if one is based on other points of view, it is not clear what is seen from our own. Most likely this will concern some of our reactions. Notwithstanding some weakness, maybe unavoidable, we believe that the discussion is the fundamental nourishment for any research pathway, and it is always worthwhile to engage in it in order to correct it, improve it, enrich it. A sincere thank you to all participants to this debate for the reflections that it stimulated, while we wait to continue the discussion.

References

ALTHUSSER L.
1974 *Philosophie et philosophie spontanée des savants,* Paris : Maspero.

AMALBERTI R.
1996 *La conduite de systèmes à risques,* Paris : Presses Universitaires de France.

AW A., SPERANDIO J.-C.
1997 Le Full Flight simulateur comme support de formation et de recherche sur le comportement humain dans le pilotage des avions de nouvelle génération, *Actes du 32e Congrès de la Société d'Ergonomie de Langue Française* : 439-447, Lyon : SELF.
1998 La dimension temporelle dans le pilotage et l'exploitation des avions glass-cokpits, *Actes du 33e Congrès de la Société d'Ergonomie de Langue Française* : 371-378, Paris : CNAM.

BAKHTIN, M.M. (VOLOSINOV V.N.)
1929/1977 *Le marxisme et la philosophie du langage*, Paris: Editions de Minuit

BARTOLI H.
1991 *L'économie multidimentionnelle*, Paris : Economica.

BEGUIN P.
2007 O ergonomista, ator da concepção, in Falzon, P. (Ed.), *Ergonomia:* 317-330, São Paulo : Blucher.

BIBIKHIN V.
2003 Le mot et l'événement, in Bakhtin M., *Pour une philosophie de l'acte* : 123-150, Paris : Editions L'Age d'Homme.

BOURGEOIS F., HUBAULT F.
2013 L'activité, ressource pour le développement de l'organisation du travail, in Falzon, P. (Ed.), *Ergonomie constructive* : 89-102, Paris : Presses Universitaires de France.

BROSSARD M.
2012 Le Développement comme transformation par appropriation des œuvres de la culture, in Clot Y. (Ed.), *Vygotski maintenant :* 95-115, Paris : La Dispute.

BRUNER J.
2000 *Culture et modes de pensée,* Paris : Retz.

CANGUILHEM G.
1972-1985 Régulation (épistémologie), *Encyclopaedia Universalis,* 15, Paris : Encyclopaedia Universalis France.
1978 *Idéologie et rationalité dans l'histoire des sciences de la vie,* Paris : Vrin.
2005 *Le normal et le pathologique*, augmenté de *Nouvelles Réflexions concernant le normal et le pathologique*, (9th ed.), Paris : Presses Universitaires de France.

CAZAMIAN P., HUBAULT F., NOULIN M. (EDS.)
1996 *Traité d'ergonomie*, Toulouse : Octarès Editions.

CLOT Y.
1999 *La fonction psychologique du travail*, Paris : Presses Universitaires de France.
2001 Méthodologie en clinique de l'activité. L'exemple du sosie, *in* Santiago Delfosse M., Rouan G. (Eds.), *Les méthodes qualitatives en psychologie*, Paris : Dunod : 125-144.
2006 Clinique du travail et clinique de l'activité, *Nouvelle revue de psychosociologie*, 1 : 165-177 ; www.cairn.info/revue-nouvelle-revue-de-psychosociologie-2006-1-page-165.htm.
2008 *Travail et pouvoir d'agir,* Paris : Presses Universitaires de France.
2010 *Le travail à cœur. Pour en finir avec les risques psychosociaux*, Paris : La Découverte.
2011 Théorie en clinique de l'activité, in Maggi B. (Ed.), *Interpréter l'agir : un défi théorique* : 17-39, Paris : Presses Universitaires de France.

CLOT Y., FAÏTA D.
2000 Genre et style en analyse du travail, *Travailler,* 4 : 7-43.

CLOT Y., GORI R.
2003 *La catachrèse : éloge du détournement*. Nancy : Presses Universitaires de Nancy.

DANIELLOU F.
2007 A ergonomia na condução de projetos de concepção das situações de trabalho, in Falzon, P. (Ed.), *Ergonomia:* 303-315, São Paulo: Blucher.

DEJOURS C.
1985 Construire sa santé, in Cassou B., Huez, D., Mousel, M.-L., Spitzer, C., Touranchet-Hebrard, A. (Eds.), *Les risques du travail* : 18-21, Paris : La Découverte.
2002 *Le facteur humain*, Paris : Presses Universitaires de France.
2011 Sofrimento e prazer no trabalho. A abordagem pela psicopatologia do trabalho, in Lancman S., Sznelwar L.I. (Eds.), *Christophe Dejours: da psicopatologia à psicodinâmica do trabalho*: 167-183, Brasília: Paralelo 15; Rio de Janeiro: Fiocruz.
2012 *Trabalho vivo: Trabalho e emancipação*: tomo II, Brasília: Paralelo 15.

DE LA GARZA C., MAGGI B., WEILL-FASSINA A.
2011 *Temps, autonomie et discrétion : analyse d'activités dans la maintenance ferroviaire / Time, autonomy and discretion: activity analysis in railway maintenance / Tempo, autonomia e discrezionalità: analisi di attività nella manutenzione ferroviaria*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

DI RUZZA R., HALEVI J.
2003 *De l'économie politique à l'ergologie : lettre aux amis*, Paris : L'Harmattan.

DURRIVE L.
2014 La démarche ergologique : pour un dialogue entre normes et renormalisations, *Ergologia*, 11 : 171-198.

FAÏTA D.
1989 Mondes du travail et pratiques langagières, *Langages*, 93 : 110-124.
2011 Théorie de l'activité langagière, in Maggi B. (Ed.), *Interpréter l'agir : un défi théorique* : 41-67, Paris : Presses Universitaires de France.
2014 Le travail des soudeurs : analyse clinique de l'activité / Il lavoro dei saldatori : analisi clinica dell'attività, in Maggi B., Faïta D., Rulli G., *Le travail de soudure pour l'ingénierie nucléaire*: 5-41 / *Il lavoro di saldatura per l'ingegneria nucleare*: 5-39, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

FAÏTA D., MAGGI B.
2007 *Un débat en analyse du travail. Deux méthodes en synergie dans l'étude d'une situation d'enseignement,* Toulouse : Octarès Editions.

FAÏTA D., SAUJAT F.
2010 Développer l'activité des enseignants pour comprendre et développer leur travail : un cadre théorique et méthodologique, in Yvon F., Saussez F. (Eds.), *Analyser l'activité enseignante,* Québec : Presses de l'Université de Laval : 41-69.

FALZON P.
2007 Natureza, objetivos e conhecimentos da ergonomia, in Id. (Ed.), *Ergonomia:* 3-19, São Paulo: Blucher.
2013 Pour une ergonomie constructive, in Id. (Ed.), *Ergonomie constructive* : 1-15, Paris : Presses Universitaires de France.

FAVERGE J.-M.
1966 Les modèles de régulation, in Id. (Ed.), *L'ergonomie des processus industriels* : 116-145, Bruxelles : Éditions de l'Institut de Sociologie.

FAVERGE J.-M., HOUYOUX A., OLIVIER M., QUERTON A., PONCIN A., SALENGROS P.
1970 *L'organisation vivante : comportements d'ajustement et d'évolution au sein des organisations*, Bruxelles : Éditions de l'Institut de Sociologie.

FRIEDMANN G.
1946/1961 *Problèmes humains du machinisme industriel*, Paris : Gallimard.
1956/1963 *Le travail en miettes*, Paris : Gallimard.

GROSJEAN V.
2005 Le bien-être au travail : un objectif pour la prévention ? *Cahiers de notes documentaires, INRS, Hygiène et Sécurité du travail,* ND 2223-198 : 29-40.

GUERIN F., LAVILLE A., DANIELLOU F., DURAFFOURG J., KERGUELEN A.
1997 *Comprendre le travail pour le transformer. La pratique de l'ergonomie,* Paris : ANACT.

HEMPEL C.G.
1966 *Phylosophy of Natural Science*. Englewood Cliffs (N.J.): Prentice-Hall.

HUBAULT F.
2006 L'ergonomie est une exercice d'émancipation et de deuil, in Aletcheredji T., Heddad N. (Eds.), *A quoi sert l'ergonomie* : 13-14, Toulouse : Octarès Editions.
2011 Os desafios relacionados à mobilização da subjetividade na relação de serviço, in Sznelwar, L.I. (Ed.) *Saúde dos bancários*: 125-149, São Paulo: Publisher.

LEPLAT J.
1997 *Regards sur l'activité en situation de travail: contribution à la psychologie ergonomique*, Paris : Presses universitaires de France.

MAGGI B.
1984/1990 *Razionalità e benessere. Studio interdisciplinare dell'organizzazione*, Milano: Etas Libri.
2003/2016 *De l'agir organisationnel. Un point de vue sur le travail, le bien-être, l'apprentissage*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.
2008 Organisation et bien-être. L'analyse du travail aux fins de prévention, in Terssac G. de, Saint-Martin C., Thiébault C. (Eds.), *La précarité : une relation entre travail, organisation et santé* : 193-206, Toulouse : Octarès Éditions.
2010a *Organizational analysis, occupational medicine and union action: a possible encounter / Analisi organizzativa, medicina del lavoro e azione sindacale: un incontro possibile*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

2010b *Peut-on transmettre savoirs et connaissances ?/ Can we transmit knowledge?/ Si possono trasmettere saperi e conoscenze?*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.
2011 Théorie de l'agir organisationnel, in B. Maggi (Ed.), *Interpréter l'agir: un défi théorique* : 69-96, Paris : Presses Universitaires de France.
2015 Autour de la régulation sociale/ Su la regolazione sociale, in Thoemmes J. (Ed.), *Temps de travail et régulation sociale* : 19-31 / *Tempo di lavoro e regolazione sociale*: 18-30, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

MAGGI B. (ED.)
2011 *Interpréter l'agir : un défi théorique*, Paris : Presses Universitaires de France.

MAGGI B., RULLI G.,
2012 *Work analysis for prevention according to the "Organization and Well-being" Program / L'analyse du travail pour la prévention selon le Programme «Organization and Well-being » / L'analisi del lavoro per la prevenzione secondo il Programma "Organization and Well-being"*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library ; 2012 ed. port., Organização e bem-estar em um serviço sanitário, in Sznelwar L.I., Mascia F.L. (Eds.), *Cadernos de TTO*, n° 3, EPUSP: 107-150, São Paulo: Editora Blücher.
2014 Analyse organisationnelle d'une activité de soudure / Analisi organizzativa di un'attività di saldatura, in Maggi B., Faïta D., Rulli G., *Le travail de soudure pour l'ingénierie nucléaire* : 42-86 / *Il lavoro di saldatura per l'ingegneria nucleare* : 40-81, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

MAGGI B., SOLE A.
2004/2007 Société, entreprise, individu : la surprenante actualité de la « vision du monde » de Taylor, *Cahiers de recherche HEC*, 869 : 1-25.

MARX R.
2010 *Trabalho em grupo e autonomia como instrumentos de competição*, São Paulo: Atlas Editora.

MAUSS M.
1950 *Sociologie et anthropologie*, précédé d'une *Introduction à l'œuvre de Marcel Mauss*, par Claude Lévi-Strauss, Paris : Presses Universitaires de France.

MORIN E.
1990 *Science avec conscience*, Paris : Fayard.

OCHANINE D. A.
1978 Le rôle des images opératives dans la régulation des activités de travail. *Psychologie et éducation*, 2, 63-72.

ODDONE I., RE A., BRIANTE G.
1977 *Esperienza operaia, coscienza di classe e psicologia del lavoro.* Torino: Einaudi.

OMBREDANE A., FAVERGE J.-M.
1955 *L'analyse du travail*, Paris : Presses Universitaires de France.

PROT B.
2006 La fonction du clinicien dans les méthodes de clinique de l'activité, *Nouvelle revue de psychosociologie,* 1 : 31-44.

PROT B., CLOT Y., KOSTULSKI K.
2008 Le genre professionnel, entre l'organisation prescrite et la santé individuelle, in A. Durand-Delvignes A., C. Desombre C., Verquerre R. (Eds.), *Psychologie du travail et des organisations : des savoirs au service de l'action* : 133-150, Nancy : Presses Universitaires de Nancy.

PROT B., MIOSSEC Y.
2007 Le conflit et l'intrus en clinique de l'activité, *Le Télémaque*, 1-31 : 63-80 ; www.cairn.info/revue-le-telemaque-2007-1-page-63.htm

REY A. (Ed.)
1992 *Dictionnaire historique de la langue française*, Paris: Dictionnaires Le Robert.

REYNAUD J.-D.
1979 Conflit et régulation sociale. Esquisse d'une théorie de la régulation conjointe, *Revue française de sociologie*, 20, 2 : 367–76.
1988 Les régulations dans les organisations. Régulation de contrôle et régulation autonome, *Revue française de sociologie*, 29, 1 : 5-18.

RUFFIER J., BLAISE D.,
1990 Des ouvriers dessinent leurs machines et le changement technique, *Technologies, Idéologies, Pratiques,* 11, 2 : 78-92.

RULLI G.
2010 *Stress at Work: Risk Evaluation and Prevention / Le stress au travail : évaluation du risque et prévention / Lo stress nel lavoro: valutazione del rischio e prevenzione*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

RULLI G. (ED.)
2014 *Theories on stress / Teorie sullo stress*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

SCHWARTZ Y.
1988 *Expérience et connaissance du travail*, Paris : Editions sociales.

SCHWARTZ Y., FAÏTA D.
1983 *L'Homme Producteur. Autour des mutations, du travail et des savoirs,* Paris : Messidor/Editions sociales.

SPERANDIO J.-C. (ED.)
1969 Les variations du partage des tâches entre un opérateur et son assistant en fonction de la charge de travail du système, *Bull. CERP*, 18, 2 : 81-98.
1972 Charge de travail et régulation des processus opératoires, *Le Travail Humain*, 35, 1 : 85-98.
1996 *L'ergonomie face aux changements technologiques et organisationnels du travail humain*. Toulouse : Octarès Editions.

SZNELWAR L.I.
2013 *Quando trabalhar é ser protagonista e o protagonismo do trabalho,* São Paulo, Tese de Livre-docência defendida no Departamento de Engenharia de Produção da Escola Politécnica da Universidade de São Paulo.

TAYLOR F.W.
1903/1947 *Shop Management*, in Id., *Scientific Management*, New York: Harper.
1911/1947 *The Principles of Scientific Management*, in Id., *Scientific Management*, New York: Harper.
1912/1947 *Hearings Before Special Committee of the House of Representatives to Investigate the Taylor and Other Systems of Shop Management Under Authority of House Resolution 90*, III: 1377-1508, in Id., *Scientific Management*, New York: Harper.

TERSSAC G. DE
1992 *Autonomie dans le travail*, Paris: Presses Universitaires de France.
2011 Théorie du travail d'organisation, in Maggi B. (Ed.), *Interpréter l'agir, un défi théorique* : 97–121, Paris: Presses Universitaires de France.
2012 Autonomie et travail, in *Dictionnaire du travail* : 47-53, Paris : Presses Universitaires de France, http//hal-00846542.

TERSSAC G. DE, MAGGI B.
1996b Le travail et l'approche ergonomique, in Daniellou F. (Ed.), *L'ergonomie en quête de ses principes. Débats épistémologiques* : 77-102, Toulouse : Octarès Editions.

THOEMMES J.
2011 La négociation du temps de travail, in Maggi B. (Ed.), *Interpréter l'agir, un défi théorique* : 259-278, Paris: Presses Universitaires de France.
2015 Temps, travail et régulations : en quête du processus d'action multi-scalaire/ Tempo, lavoro e regolazione: verso il processo d'azione a più livelli, in Id. (Ed.), *Temps de travail et régulation sociale* : 6-18 / *Tempo di lavoro e regolazione sociale* : 6-17, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

THOMPSON J.D.
1967 *Organizations in Action*, New York: McGraw-Hill.

VYGOTSKIJ L.S.
1934/1997 *Pensée et langage*, Paris : La Dispute.

WEBER, M.
1922/1980 *Wirtschaft und Gesellschaft. Grundriß der Verstehenden Soziologie*, Tübingen: Mohr Siebeck.

WISNER A.
1971/1995a À quel homme le travail doit-il être adapté?, in Id., *Réflexions sur l'ergonomie (1962-1995)* : 47-56, Toulouse : Octarès Editions.
1995b Entretien d'Alain Wisner avec Gilbert de Terssac et Bernard Pavard, in Wisner A., *Réflexions sur l'ergonomie (1962-1995)* : 1-20, Toulouse : Octarès Editions.

ZILBOVICIUS M., FLEURY A.C.C.
1997 *Modelos para a produção, produção de modelos. Contribuição à análise da gênese, lógica e difusão do modelo japonês*, São Paulo: Boletim Técnico da Escola Politécnica, Universidade de São Paulo.