# Doing Research Upside Down: Action and Research in Cross Self-Confrontations

*Laure Kloetzer*

**Abstract**

This paper highlights three main points. Firstly, it argues that despite the positioning of mainstream psychology as "objective research" i.e. disengaged from taking action in public life, there has always been in psychology a (quantitatively) minor but (qualitatively) strong tradition of intervention, defined as a joint practice engaging researchers and practitioners in social transformation. It shows how this alternative way of doing research affects all dimensions of the researchers' professional practice, for better or for worse. Secondly, it presents a specific perspective on intervention, created in France and used in multiple work settings in the last twenty years, called *Clinic of Activity*. It then introduces and discusses a methodology designed to support development at work through collaborative work analysis and structured dialogue, the *Cross Self Confrontations*. Thirdly, it reports on a research in Cross Self-Confrontations recently conducted in a Swiss factory, and shows how this methodology supports the co-creation of knowledge and the development of dialogue within a group of workers and across the hierachical lines, therefore contributing to the deep discussion and transformation of work practices.

**Keywords**: Activity Analysis, Activity Development, Cross Self-Confrontation, Dialogue, Dialogical Methodology, Social Transformation

**Haciendo La Investigación Al Revés: Acción E Investigación En Trans -Auto-Confrontaciones**

**Resumen**

Este artículo destaca tres puntos principales. En primer lugar, se argumenta que a pesar del posicionamiento de la corriente principal de la psicología como "investigación objetiva", es decir, desconectada de la adopción de medidas en la vida pública, siempre ha habido en la psicología una tradición de intervención (cuantitativamente) menor pero (cualitativamente) fuerte, definida como una práctica conjunta que involucra a investigadores y profesionales en la transformación social. Muestra cómo esta forma alternativa de hacer investigación afecta a todas las dimensiones de la práctica profesional de los investigadores. En segundo lugar, se presenta una perspectiva específica de intervención, creada en Francia y usada en múltiples entornos de trabajo en los últimos veinte años, llamada *Clínica de Actividad*. Luego, se introduce y discute una metodología diseñada para apoyar el desarrollo en el trabajo a través del análisis de trabajo colaborativo y el diálogo estructurado, *Trans-autoconfrontaciones*. En tercer lugar, se informa sobre una investigación en auto-confrontaciones

cruzadas llevada a cabo recientemente en una fábrica suiza y muestra cómo esta metodología apoya la co-creación de conocimiento y el desarrollo del diálogo dentro de un grupo de trabajadores y a través de las líneas jerárquicas, contribuyendo así para una discusión profunda y transformación de las prácticas de trabajo.

**Palabras clave**: Análisis de actividad, desarrollo de actividad, trans-autoconfrontación, diálogo, metodologia dialógica, transformación social

## 1.    What shall we do? About intervention in psychology

Kurt Lewin, commenting on the problems of intergroup relations in the United States in his foundational paper on *Action Research and Minority Problems* (1946), reported being in contact with a wide range of professional organisations and parties, which would make most of today's psychologists envious. He added: "Two basic facts emerged from these contacts: there exists a great amount of good-will, of readiness to face the problem squarely and really to do something about it. If this amount of serious good-will could be transformed into organised, efficient action, there would be no danger for intergroup relations in the United States. But exactly here lies the difficulty. These eager people feel in the fog. They feel in the fog on three counts: 1. What is the present situation? 2. What are the dangers? 3. And, most important of all, what shall we do?" (p.34). Although we might be less optimistic than Kurt Lewin on our possibilities as researchers to dispel the fog, the question: "what shall we do"? remains. It resonates with some today's urgent social issues, from social inclusion, migration, and the rise of nationalism across Europe, to the global threats of climate change. According to Kurt Lewin, research has the power to organise good-will into efficient collective action, in so far as it adopts a "social management or social engineering" agenda: "It is a type of action-research, a comparative research on the conditions and effects of various forms of social action, and research leading to social action. Research that produces nothing but books will not suffice." (p.35). How? By the close integration of action, training and research, all based on an underlying principle: the wish to face reality collectively, with appropriate methods, in "co-operative teams formed not on the basis of sweetness but on the basis of readiness to face difficulties realistically, to apply honest fact-finding, and to work together to overcome them…" (p.42). Lewin considers that efficient action requires "objective standards of achievement", collectively established in order to evaluate our actions.

Twenty years before, Vygotsky had been opening the way for a new practice of psychology, engaged simultaneously in active theorising of a revolutionary psychology of human development, and in tackling social issues with an urgent commitment to implementing new social practices and institutions. The relationships between theory and practice are at the core of his reflections. He suggests that we establish success, or failure, of our ideas in practice as an official standard of achievement for theory, as explained in this extract through a colonial metaphor: "Previously, practice was a colony of theory, depending in all on the metropolis; theory in no way depended on practice; practice was the conclusion, the appendix, to put it simply an excursion outside the limits of science, a para-scientific, post-scientific operation, which began where the scientific process was

considered complete. Success or failure had virtually no impact on the fate of the theory. Today the situation has reversed; practice creeps into the deepest foundations of the scientific process, and transforms it from beginning to end; practice proposes the tasks, and serves as the supreme judge of theory, criterion of truth. " (Vygotsky 1999, p.235, our translation). This (once again) optimistic view of social science as a foundational block of the historical development of society is grounded in a broad conception of the scope of activity of the researchers, actively engaged in writing, teaching, and developing news programmes for facing social and educational challenges, for example. It challenges the unfortunate but well-established division of labour between researchers and researched, and therefore adopts a political perspective on research in psychology.

Considering the relationships of theoretical constructions and practical challenges again, we notice that although Lewin and Vygotsky call, in very different times and contexts, for renewed relationships, they consider them in reverse ways: for Lewin, research will help evaluate objectively the efficiency of collective actions towards social progress (and therefore drive their continuous progress), while Vygotsky claims that engagement in action will help evaluate objectively the success and pitfalls of research (and therefore trigger new theoretical developments). In this paper, we chose the word *intervention* to refer to research approaches defined as a joint practice engaging researchers and practitioners in knowledge construction and social transformation. Although mainstream psychology has generally adopted a cautious and disengaged approach, inspired by the natural sciences, in which the relationships between researchers and researched are neutralised and protocolised as much as possible in order to pursue the research purposes without risks of "biaising" its results, intervention has a long-standing tradition in psychology. However, the respective positioning and part of researchers and practitioners in joint action and concrete social transformation varies according to the theoretical and methodological perspective of the researchers, as well as according to the situations and goals of intervention. It is outside the scope of this paper to track its various roots and inspirations. We would like to describe now how these alternative ways of doing research affect all dimensions of the researchers' professional practice. To do so, we will contrast "intervention" in general with "mainstream psychology" in general, which obviously has some limits. As mentioned, each research project deploys in its own ways, considering how its research question is turned into methodological steps for data collection, analysis and communication. Therefore, we will complete this abstract overview at the end of this paper by documenting the recent case of a collaborative research in Cross Self-Confrontations in a Swiss factory, showing the specific forms that this challenging way of doing research "upside down" takes in this project. This paper will offer a mostly French view on the relations between action and research, informed by the history of work analysis and intervention in French-speaking ergonomics and work psychology.

When researchers engage in the time-consuming and unsure process of creating relevant knowledge and new practices collaboratively with practitioners, this has implications in the practice of research on a number of dimensions: the first one being the definition of the research project and setting of the research question, which is arguably the leading dimension of each research project. In *mainstream research* in psychology, the research question is defined by the researcher (or the research team) at the crossroads of
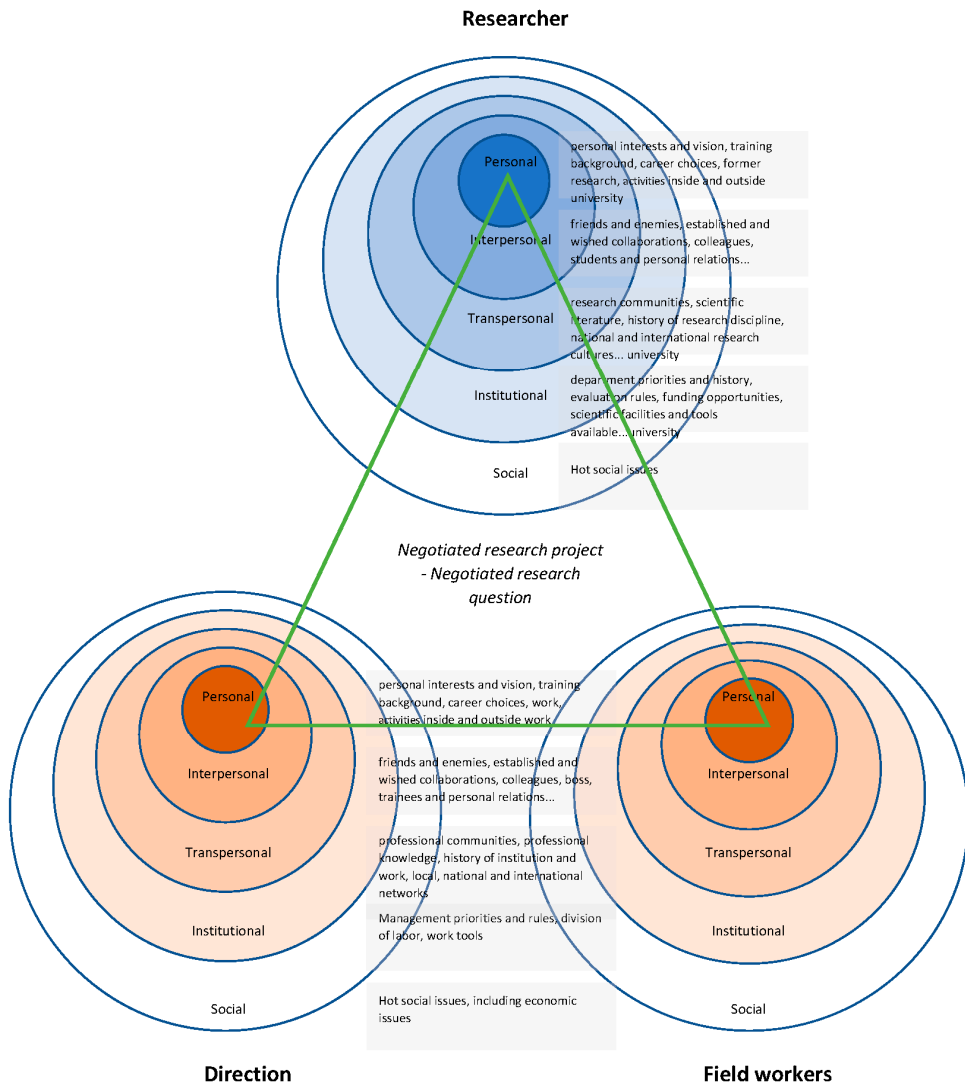
personal interests and current advances of the scientific knowledge as displayed in the sci-scientific literature. A careful analysis of the literature on a given topic convinces the researcher (or not) that there is something interesting to look for here. The research question is usually crafted in the continuity of (or at least in dialogue to) one's own past research. Scientific activity being strongly influenced by collective dynamics, it is also highly dependent on which scientific communities the researcher is participating in: the type of epistemic objects discussed in these communities, the nature of the discussions and current framing of scientific problems, strongly nurture the thought of the researcher. Research questions are historically shaped and physically located. Historical specialties of university departments, epistemological choices and contrasted identity of research teams, territories and established collaborations, have an effect on which research questions a researcher active in a given department may tackle. Additionally, the research question might also be influenced by larger institutional dimensions, such as university priorities or funding opportunities in a specific time and country, for example. Scientific tools and facilities which are available at a given time may also generate research questions which are tailored to make the best use of them. Finally, researchers being normal human beings, some research questions are inspired by their life experiences or frictions, and linked to their extraprofessional concerns or hobbies (family experiences, sport or artistic experiences, friendships, for example). In some cases, the research question reflects broader social issues and engagements through the understanding that the researcher has of her scientific and social responsibilities. The "question of the research question": how it emerges, why this research question appears now, which kind of research this research question drives, etc., is therefore already extremely complex in mainstream psychology. It is the complex interplay of personal, interpersonal, historical and organizational dynamics in a research and life community, centred on the researcher herself.

*Figure 1.* Dimensions at play in the definition of the research question in mainstream psychology
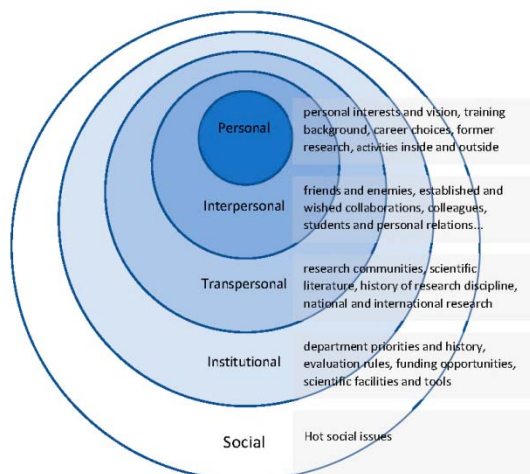
In the case of intervention, the situation is even more complex: as for mainstream research, all these dimensions are at play in the definition of the research project and question. However, the research project and question are not defined solely by the researcher (or research team) but in interaction with the fieldworkers/participants. The research project needs to make sense for the actors in the field. These actors usually have diverse, sometimes diverging, views on what the problems are in the field and how to solve them. They are both experts in their work, work practices and work organisation, and sometimes, following Lewin, in the fog. Changing the purpose of research to include a concern for action in practice, means changing the ways of working for researchers to take practice and practitioners' perspectives seriously into account. French-speaking ergonomics have developed a specific couple of concepts to catch the dynamics of negotiation associated with transformative field research in work organisations. In their vocabulary, the researchers have to navigate and negotiate both the organisational command and workers' demand (Ombredane & Faverge 1955; Daniellou 2005). The organisational command is the question or issue addressed to the researchers by the direction of the company or public institution. The researchers try to understand this explicit and implicit command and its underlying logics and issues, thanks to discussions with the direction, trade unions, managers and field workers, as well as thanks to a first round of observations of the work process and analysis of documents describing the work organisation. The researchers negotiate the command, and re-formulate it in a way which is interesting and acceptable for both the researchers and the decision makers. Opportunities to engage further into discussion with the decision makers on a potential intervention within their organisation are usually a follow-up of earlier successful collaborations. In some economic fields, like in High Reliability Organisations (HRO: including aviation, train transport, nuclear plants, and hospitals, for example), the history of collaboration between researchers and practitioners is so rich that research is without question part of the design process and evaluation cycles of new tools and procedures. However, a negotiated command is not enough to allow researchers to proceed; they also need to check that this command from the direction meets some authentic demand from the fieldworkers. Demand, in this perspective, is the interest expressed by the fieldworkers for the research project and question raised by the researchers (which reflect the negotiated command of the direction and their own understanding of the realities of the work process). In this context, the research project and question cannot be fully defined by the research team. They result from observation, analysis, dialogue, and negotiation with multiple partners within the organisation (directions, trade unions, managers and fieldworkers to begin with). Research projects and questions in an intervention perspective are "boundary objects" (Star & Griesemer 1989), «both adaptable to different viewpoints and robust enough to maintain identity across them».

*Figure 2.*     Dimensions at play in the definition of the research question in intervention

**Researcher**



*Negotiated research project - Negotiated research question*

**Direction**                                                                                   **Field workers**

Although this negotiated, decentred way of defining the research project and question is precious for action purposes, it may raise some concerns regarding the research per se. Among these concerns are the following points: this flexible, almost ad-hoc, way of setting a research question contradicts the expectations of generalisation and cumulative knowledge. Theoretical generalisation from case studies being an important challenge in social science (Becker 2014; Markova 2016), the situation is even worse when the research question is the outcome of a complex negotiation between multiple actors, some of them with no interest in academic research at all and lots of urgent practical concerns. The ad-hoc setting of re-

search questions makes the generation of knowledge across different research projects even more difficult. This may also be challenging for the career of the researcher. This delicate balance between energy invested in practical transformation/energy invested in theoretical construction might not be fully recognised in the academic setting, focused on theoretical production.

This way of setting the research project, purpose and question has multiple implications on diverse dimensions of the scientific process, including the relationship to the field, the status of research participants, the research method, the research setting, the ethics of the research, the analysis of the data, the ownership of the data, the communication of the findings, and the diffusion of the research.

Regarding the relationship to the field, in mainstream research, the field may have no relevance at all and research participants may be considered as individuals independent from a specific social context. The challenge for researchers is to gain access to these research participants, which results from an individual negotiation process (convincing them to participate in the research, asking for permission to proceed). Usually the relevance of the research to the research participants, beyond minimal curiosity, is of limited interest for the researcher. If the research includes field research, then the challenge of gaining access is extended to the institution. In case of intervention, the process is reverse: the successful definition of the research project guarantees its practical relevance. Therefore, the challenge is in understanding the different dynamics around the potential research project and negotiating good conditions to do it. Access itself is granted by the existence of a command, and further granted by the successful negotiation on the purpose and methodology of the research, and its relevance for the organisation/participants.

Regarding the status of research participants, intervention aims at overcoming the institutionalised division of labour in research between researchers and researched, who are in the best case considered as research subjects, and might even sometimes be considered as research objects, in mainstream research in psychology. Collaboration takes various forms in different intervention traditions. However, it should be considered true collaboration only if the research participants have power on the definition of the research project per se, including its purpose, ways of investigation (method), analysis and communication. Therefore, the change from mainstream research to intervention implies also a redefinition of the research methods. Which methodological innovations are required? All those who give some control to the research participants on the research question, choice of data to be collected, and analysis of these data. These innovative research methodologies usually require the creation of dialogical frameworks during the research project in order to discuss collectively and collaboratively (between researchers and different participants to the research project) the data collected and the subsequent analyses.

*Tab 1.* How intervention transforms the scientific process.

| | Mainstream research in psychology | Intervention |
|---|---|---|
| Definition of the research project/Research question | Set by the researcher according to his interests and understanding of his scientific activity (researcher-centred view) | "Boundary objects", negotiated by the researcher according to his interests and understanding of his scientific activity, as well as the relevance of the project for the partner organisation, explicit and implicit command and perceived field demand (decentred view). |
| Relationship to the field | Gaining access is the challenge. Access to the field/to the research participants needs to be negotiated. The researcher usually presents the topic of his/her research and asks for permission to proceed. | Negotiating command (explicit/implicit), demand (the existence/the nature of a demand) and the research process and resources is the challenge. Relevance of the research for the work organisation and research participants is central. |
| Status of research participants | Research subjects, informants (in the ethnographical tradition) providing data to the researchers | Participants in the research project, contributing to its design, by extension: co-researchers. |
| Research method | Any quantitative or qualitative method aiming at producing data for the researchers | Any quantitative or qualitative method aiming at producing and discussing data which will be used collaboratively by researchers and research participants to pursue action and research purposes. Creation of dialogical frameworks to support the co-analysis of data. |
| Research setting | University (lab or meeting room) or field or any other location (home, cafés, etc.) | University (lab or meeting room) or field or any other location (home, cafés, etc.). However, the way the research project deploys itself in the space of the partner organisation is an object of reflection and negotiation for the researchers |
| Ethics of the research | Procedural ethics, validated by an academic ethics commission, to protect informed and free participation and anonymity of the participants. | Beyond procedural ethics, the researchers consider how to really protect the participants in practice and confidentiality of data collected. They take the responsibility of controlling how the data will be used and interpreted, what for and by whom. |
| Analysis of data | Performed by the researchers | Performed by the researchers and the research participants iteratively, although the researchers take the final responsibility of the analyses. |
| Ownership of data | Owned by the researchers | Data are under the control of research participants. Ownership and use are negotiated, the data may be owned by the researchers, or jointly by the researchers and the partner organisation. All ownership is ruled by contractual safeguards. |
| Communication of findings | In academic networks, for the benefits of the researcher. Publicly, for the benefits of the society. Sometimes in professional networks, training programs, museums, theatres, public mediation spaces… | In debriefing sessions, for the benefits of research participants and of the partner organisation. In professional networks, for the benefits of similar organisations. In academic networks, for the benefits of the researcher. In training programmes, museums, theatres, public mediation spaces… Publicly, for the benefits of the society. |
| Forms of findings | Usually scientific writings (reports, papers and books). Sometimes, alternative forms (videos, theatre plays, newspaper articles…) adapted to a public audience. | Mixed forms adapted to a local audience of research participants, workers and decision-makers (videos, training sessions, meetings, short reports, etc.). Also scientific writings (reports, papers and books). Sometimes, alternative forms (videos, theatre plays, newspaper articles…) adapted to a public audience. |
| Diffusion of research findings | By the researchers, in their communities and other public spaces they choose. | By the researchers, in the partner organization, in professional networks, in their communities, and other public spaces they choose. By the research participants and by the partner organisation, for their own purposes. |
| Outcomes of the research project | New knowledge | New knowledge, social innovations, shared experience of collaboration. |

## 2.    Cross Self-Confrontations: designing a research methodology supporting development

In this section, we present a specific perspective on intervention, created in France and used in multiple work settings in the last twenty years, called *Clinic of Activity* (or *Activity Clinic*, depending on the translations. The original name in French is *Clinique de l'activité*). In particular, we will introduce a methodology designed to support development at work through collaborative work analysis and structured dialogue, the *Cross Self Confrontations (CSC)*. The methodology of CSC (Clot, Faïta, Fernandez & Scheller 2000) is linked to the Clinic of Activity approach, which was developed since 1990s at the Conservatoire National des Arts et Métiers (Cnam) Paris, France, by Yves Clot and his colleagues (Clot 1995, 1999, 2008). It is now applied by researcher-interventionists with professionals in very diverse work settings (teachers, surgeons, artists, managers, sportsmen, construction workers, factory workers, prosecutors, judges, priests, translators…) mostly in francophone countries (France, Switzerland, Canada, …). Clinic of Activity is grounded both in clinical work psychology and work psychopathology (Le Guillant 1984; Tosquelles 2003) and in French-speaking work and activity analysis, largely inspired by the seminal work of French ergonomics in diverse work settings to understand the activity of the workers in its context and transform it (Ombredane & Faverge 1955; Guérin, Laville & Daniellou,1997; Wisner 1995). Above all, this French tradition builds heavily on Vygotsky's works, and his insight that to study development, we need to provoke it. Action therefore is both one goal of the research and its means. Development of health: defined following Canguilhem[1] as the possibility of an active contribution of the subject to one's own history and to one's social life, and therefore, "power to act" (Clot 1999, 2008) of the subject are at the core of this approach. of all partners taking part to the intervention. The power to act, inspired by Spinoza's work, is defined as measuring: "*the radius of effective action of the subject or of subjects in their everyday professional milieu, what is called the radiance of activity, its power of re-creation[2]*" (Clot 2008, p. 13). Clinic of Activity is therefore defined as a method for action, with a goal of transformation, and as a method of research, with a goal of production of scientific knowledge.

Following Vygotsky, Clinic of Activity considers a unit of analysis of the work activity which is the psychological activity of the subject, conceived as being multidimensional; it is personal (it is the subjective activity of a singular subject), interpersonal (the work activity takes its forms and meaning through interpersonal interactions), transpersonal (it is dynamically situated in the history of the place, and inherits from collective ways of doing, speaking, learning and acting, which it may also transform) and impersonal (it is situated in a specific work organisation, and deals in creative ways with its fixed rules, tasks and tools). Clot (1999) introduced the concepts of reality of the activity to go one step beyond the usual distinction between the task (what is expected from the worker, the normative ac-

---

1    "I am going well, to the extent that I feel capable of taking responsibility for my actions, of bringing things into existence and of creating relationships between things that would not come to them without me" (Canguilhem, 2002, p. 68, our translation).

2    Le pouvoir d'agir « mesure le rayon d'action effectif du sujet ou des sujets dans leur milieu professionnel habituel, ce qu'on appelle le rayonnement de l'activité, son pouvoir de recréation » (Clot, 2008, p. 13).

tivity) and the (realised) activity (what gets really done to answer the demands of the tasks and manage to do the work, while also taking into account one's physical and psychological condition). As stated by Yves Clot (Clot 2006, p.165): "The"real of the work"understood as what is difficult to achieve, to do or to say, but also as a crucible where we can express our full potential, or as pleasure of the possible – on the technical level as on the social level- is subject to social repression".

In this context, CSC have been developed as a means to support the workers' reflexivity on their own work practice and work organisation. CSC bear some similarities with the Change Lab methodology and Developmental Work Research of Y. Engeström and colleagues, which cannot be fully discussed here, but are discussed in (Kloetzer, Clot & Quillerou-Grivot 2015). In CSC, the researchers transform the conditions in which workers reflect on their own activity, in order to support collective elaboration, discussion and transformation of the work activity on all these dimensions: the personal and interpersonal can be developed, as well as the collective resources for thinking and action and the work organisation itself (transformation of rules, procedures, spaces, tools, tasks, and most importantly, objects of work and ways of collaborating, for example).

A CSC intervention interweaves two tracks. *"The first track is focused on conducting a clinical co-analysis of the work activities with a group of volunteers. The detailed analysis of actual work activities with volunteer subjects, who constitute the associated research group, is the vital first step required to question the organisational procedures and requirements in a documented and constructive way. On the second track, this detailed co-analysis, jointly performed with the workers within the steering committee formed for the intervention, triggers and and constrains the discussions between managers, workers, and the experts who design the work organisation. The clinical co-analysis with workers becomes a tool to transform the conditions of the dialogue at all hierarchical levels in the company."* (Kloetzer et al., 2015, p. 51). The term "associated research group" comes from I. Oddone's works (Oddone et al. 1977/1981), highlighting a specific research and training configuration in which the researchers support the efforts of the workers in analysing their own work activity. The relationships of action and research are here singular: research supports the development of action for the professionals taking part in the research.

CSC owe their name to the process of confrontation of one's own activity to the activity of the others, and to the perspective of the others on their own and one's own activity, which takes place in the research process. Confrontation to the alternative perspective of the other begins within the initial phase of the research, when researchers come to the workplace to observe the activity and interact with the workers. In comparison to observations conducted in ergonomics interventions, for example, here the researchers attempt to place the workers in the position to observe their own activity (Simonet, Caroly & Clot,2011). The confrontation process continues during the phases of simple confrontation and cross confrontation. In simple confrontation, the workers discover their own way of working with a refreshed look, thanks to its video recordings and the active presence and questioning of the researcher, who does not primarily attempt to understand but to make the workers *think* on their activity. In cross self-confrontations, this is intensified by the presence of a colleague, who engage into a peer discussion. Thanks to detailed, concrete, observable traces of the work activity, the riddle of the realised activity can be worked

through in dialogue. The CSC framework helps some aspects of the real activity to enter the public scene for potential debate, therefore highlighting this transformative potential. Expanding the power to act of the participants relies on structured confrontation, based to embodied experience, and dedicated to "*transform past experience into an instrument for dealing with future experiences*" (Clot 2008, p. 148). Video recordings of all the discussions constitute the raw data that the researchers work on to construct short video films, which will support the reflection and discussion process in the steering committee. These video recordings are edited, and then analysed and discussed repeatedly in diverse dialogue spaces: the simple self-confrontation interview; the cross self-confrontation interview; the meetings of the associated research group; the meetings of the steering committees; and the final restitution to all factory workers of the units in which the research took place. They differ by the participants involved, the material and temporal settings, the goals and instructions set by the researchers, and therefore their dialogical registers.

The video films are edited from the data collected in the research process: early in the research process (for Simple Self-Confrontations), they present only selected sequences of the work activity. The sequences are selected by the researchers, on the basis of the topics and moments discussed within the associated research group, as well as of their own understanding of the critical episodes in the field. Later in the process, they integrate sequences of work activity with sequences of dialogue in simple and cross self-confrontation interviews. They therefore present complex work situations and activities together with perspectives on these activities expressed in dialogue. As the researchers do not look for immediate convergences, but encourage silent thinking and the expression of disagreements, alternative views, questioning, and even controversies, these perspectives may well appear multiple. Therefore, the video films present real work activities with dialogues commenting these activities with a specific "colour", which is the colour of the joint efforts of investigation, exploration and analysis of the participants. Reversely, the researchers get an understanding of the work process: and of the nature of the expertise, not only through direct explanations by the workers, but also indirectly through controversies emerging between experts, and between experts and their hierarchy, in these dialogical frames.

In CSC intervention, researchers pursue firstly action purposes through the means of research, and then research purposes through the means of action. Professionals also pursue action purposes, but they agree to take the indirect way of researcher-supported work analysis and discussion in CSC. They might on the way discover what makes the uniqueness of their work activity (why it is worth doing it, what they know and what they do) and also experience its collective nature, esp. that the difficulties they face are largely shared by their colleagues. Facing the difficulties of work therefore becomes a collective endeavour. The research methods brought by the researchers open ways to pursue this collective endeavour, through the simple means of close work analysis and dialogue. Research per se happens twice in the research project: during the intervention, the researchers discuss their own ways of doing, what is happening in the field, and the way the CSC are progressing, in order to envision the next steps of their action in the field. They also analyse the data with the research participants, with a practical angle (they analyse it in order to support workers' reflexivity, organisational questioning and social transformation). After the intervention however, the researchers come back to their data, analysing the data collected during all the

project with a theoretical perspective. They then wonder what happened in the intervention, and how what they saw and documented relates to what they know about learning and development, health, or quality at work, for example.

## 3.   Case study in a Swiss factory: co-analysing work, transforming dialogue in the organisation, questioning work practices.

We now report on a research in CSC recently conducted in a Swiss factory and show how this methodology supports the co-creation of knowledge and the development of dialogue within a group of workers and across hierarchical lines, therefore contributing to the deep discussion and transformation of work practices.

   This research project has been conducted during 18 months in a Swiss factory manufacturing files for blacksmithing, forestry, ski industry, jewellery or surgery. Except for a limited number of references, for which there is massively automatised mass production, the production follows the laws of low volumes, high range of references (around 2000 file references in the company catalogue, with the additional possibility to manufacture special orders on demand, even for very small series of 1 to 10 items), with the constraints of reducing stocks and speeding delivery times. The production process is complex, with many steps, performed on a large pool of unique, sometimes 100 years old, home-made machines, each of them with its own setting features, qualities and moods: according to the temperature and moment of the day, for example, these "old ladies" may behave differently and require different technical gestures. A specific organisational context made the research project possible. First of all, the Human Resources Director and Production Director were both new in the company, and eager to solve some long-lasting difficulties: the HR Director's wish to create a new training centre to answer challenges of knowledge transmission met the Production Director's wish to analyse in detail some aspects of the production process in order to guarantee constant top quality. Secondly, the researchers and the HR Director knew each other well from a former research collaboration on a different topic and in a different context, and the HR Director had had the opportunity to personally test the Clinic of Activity approach on her own work activity. The first idea of a joint research project was launched, called: *"a file is a long story"*[3], a title capturing both the complexity of the production process and its social meaning for the local industry, after one of the researchers visited the factory and discussed with both Directors and some workers. Many negotiation steps (with the CEO, in the direction board, with staff representatives, with the teams, with the middle managers, with different workers from different departments, with the university) however were needed before the project could be fully fledged and launched. We decided to focus our efforts on a specific category of workers, who exemplified expertise in the sense of mastery of complex, embodied skills: the "setters". These expert workers are in charge of preparing and setting the machines. They are also responsible of the quantity and

---

3     In French : « Une lime, c'est toute une histoire », which is a word game with deux meanings of this sentence : it requires many complex steps ; and it has a long, local history.

quality of the production for a subset of machines. The research project was finally established at the crossroad of diverse but joint interests and concerns of these different stakeholders, with two joint research questions: How do expert setters proceed to get a high quality production? How to innovate in the transmission of expertise in the factory? The research project was then funded by a grant for innovation from a local foundation, which did not interfere within its objectives nor planned process.

From the beginning, the research project has been collaboratively designed. The research goal, question and method have been jointly defined by the researchers, the managers and the field workers. The negotiations with the managers included two parallel discussions: one was on the ethical engagement from the research and direction team on how the data and results of the research process, especially video films, were to be used. We contractualised who would have access to them, how they would use them, and whose property the data are, at all steps of the research process (covering rushes, working films, final films, and other final products like scientific papers). The idea of the researchers was mostly to preserve the confidentiality of the data collected and to give the workers, on an individual and collective basis, full rights to decide what to show and what not to show to their colleagues, managers and directors, as well as to preserve their own freedom and independence as researchers. The second discussion was on the boundaries of the expertise, and explored which kinds of files were the most interesting for this limited analysis. It introduced the complexity of work experience and processes into the construction of the research process. Following this discussion, two groups were created, which met regularly over the course of the project. The steering committee gathered seven people with different profiles (HR Director, Production Director, two line managers, one staff representative, researchers, later joined by delegates of the associated research group). The associated research group gathered six participants (five expert setters, one novice setter), who volunteered to explore their ways of working with us, and discuss them collectively. One of their first choice was to decide what to analyse. They selected relevant work sequences and paired for the CSC analysis. They selected six sequences of work in three different cutting types (piqué, chisel and squeegee). They recorded these work sequences, then they analysed and discussed them in simple self-confrontation, cross self-confrontation, and then within the associated research group and finally with the steering committee. They also introduced the research project to their colleagues during the final presentation in the factory with the following words:

*"It wasn't easy for us to come up with acting. I hope that you will excuse our lack of knowledge in this field. You'll see that we present the basic settings of the different machines for the different shapes and sizes of steel files, as well as the quality control where we give instructions as to the making of the prongs as well as to the general quality of the files. Our work is not only to prepare the machines but also to keep in constant contact with the foreman, in order to get information about the priorities and organisation of the work. Also, with the other departments, internal accounting, the planning department, maintenance for the broken machines, the management of our fleet of machines and the staff who work with us, training new setters and operators. We need to have constant contact with our colleagues who execute these tasks upwards and downwards, setters, deburrers, in order to anticipate and manage our settings with the dippers, sanders and controllers during quality testing. Craftsmanship lies in the sum of all of these competencies. We hope to have met management's expectations in this film on our craft. We have tried to be clear and precise without going too much into technical detail. Above all, knowledge and craftsmanship is learnt on the job and needs time and patience."*

These words are very interesting, as they refract the appropriation of the research project by the research participants: on the one hand, the research project was about playing in a movie, meeting the management's expectations (the researchers' expectations are not explicitly mentioned here). On the other hand, the research project was about discovering and uncovering complex dimensions of craftmanship: in the research project, the workers got the opportunity to show that they master a large repertoire of technical gestures and a technical vocabulary, which allow them to do precise settings, to monitor the quality of the production, and to quickly and smoothly deliver top quality products. Caring for the machines (thanks to maintenance and preparation of the machines, maintenance and redesign of tools) is part of their tasks. But they also learnt that they engage in multiple other activities, esp. interprofessional activities extended in the whole factory, to anticipate, regulate or optimise the production process: interprofessional and inter-departmental collaboration with foremen, accounting and sales, planning, maintenance, methods and engineering, as well as collaboration with numerous colleagues upstream and downstream the production process, and within their teams, with middle managers and other workers, critically contribute to the quality of the final production.

Taking a closer look at the last steering committee's meetings, we can observe how our films, edited by the researchers from rushes of the research project, reflect these realities of expert work in this factory. Both the technical and the organisational activities of the workers appear in these films, directly in the recorded work sequences, and indirectly through their sophisticated, critical and far-seeing comments in the CSC dialogues. The two directors therefore experience the relevance of the workers' critical look and analysis on a number of important issues for the production process. For example, regarding the quality of the products, the workers express their views ranging from the quality of supplies to the quality of the quality control. As far as the Production Director is ready to listen, the discussion with the workers offers tracks to solve some difficulties, reframes some other difficulties with a different angle, suggests things to change, and also allows discussion of why certain things will not change. Moreover, the content of the dialogue is less important than the experience of the dialogue itself: experiencing together that a simple dialogue across hierarchical lines, on important and well-documented issues of the work organisation and production process, is possible, productive, and safe, might be the most important outcome of this research project. It rejoins Gustavsen's claim that action research may offer the experience of democratic dialogue at the workplace, therefore maybe supporting also the extension of democracy in the public sphere (Gustavsen 2017).

## Conclusion

We can now come back to our initial question: how does intervention transform the scientific process? Thanks to the case of the research project "a file is a long story", we can document these ways of doing research upside down more concretely.

*Tab 2.*  How intervention transforms the scientific process: the case of the research project "A file is a long story"

| | CSC intervention in the research project called *A file is a long story* |
|---|---|
| Definition of the research project/ Research question | What is professional expertise in the field of machine setting in the file industry? How can we innovate in learning at work and transmission of professional knowledge in this context? |
| Relationship to the field | Negotiating command of the Human Resource director (improve professional training by establishing an innovative competence centre) and Production director (secure file production by relying less on embodied experience of expert workers) and demand (interest for sharing embodied experience in order to share the realities of the factory with the direction and improve the situation). Negotiating the research process (CSC) and resources (choice of volunteer workers, participation during working hours, access to good meeting places, commitment of middle managers and direction in the project through steering committees meeting). Negotiating also the non-intervention of a HR assistant. Reminding the HR director of the specificities of the method and discussing its (non) generalisation. |
| Status of research participants | Participants in the research process are co-researchers in the associated research group or members of the steering committee (direction, trade union, middle management). |
| Research method | CSC: work analysis in the factory, with the workers; gathering of a group of volunteers for further investigation, use of the method of CSC, creation of dialogical spaces to support the co-analysis of data and transformation of organszation. |
| Research setting | Factory. Production site, training centre, and meeting rooms. |
| Ethics of the research | Researchers guarantee free and volunteer participation, respect of all participants, safe dialogical space, investigative but non-critical approach of each others' job, confidentiality of data collected and discussions (even from the direction), constant control of the research participants on what gets shown to others in the associated research group or steering committee. |
| Analysis of data | Co-analysis by the researchers and the research participants, based on sequences selected jointly by the researchers and by the participants. Discussion and validation of the final analyses by the research participants. |
| Ownership of data | Data are owned by the researchers, but kept under constant control of the research participants (even from the direction). Conditions of use have been negotiated in a research contract signed at the beginning of the research between the researchers and the company. |
| Communication of findings | General presentation of the findings to the workers in the factory, presentation of the research project and of some findings in the form of a video clip to shareholders. Presentation of the research in three conferences and two research papers. Presentation of the research in teaching at the university. Use of research findings within the new training centre in the factory. |
| Forms of findings | Four films (around 30 minutes each). Three conference presentations, two research papers. A video clip (2mn30). A blog post. Pictures (photographs of the research participants at work). |
| Diffusion of research findings | By the researchers and by the HR director. To the factory workers, shareholders, professional HR organisation, families of the factory workers who volunteered for the project, and new employees in the training centre. To academic colleagues and organisations, students. |
| Outcomes of the research project | New knowledge, some organizational transformations (linked to the relations of the factory workers with other departments, for example Methods & Engineering, Supplies, Scheduling and Quality Control), shared experience of different dialogical possibilities across the hierarchy lines, shared experience of the excellent contributions of the factory workers to broad organizational issues, shared experience within the associated research group, the steering committee, and in the factory production department, of collaboration with researchers in a CSC research & training project. |

This research project highlights both the surprisingly powerful outcomes, but also the limited reach, of this CSC intervention. Although experienced researchers engaged in a time-consuming, complex, sophisticated, well-instrumented, delicate and fairly successful research project, backed by strong methodology and theoretical background, with the explicit aim to support development and organisational transformations at work, the research resulted, in the

time scope of the project, in only limited effective changes of the work organisation. Most of these effective changes relate to the recognition, organisation or quality of interprofessional collaborations. Some are more directly technical, linked to a redefinition of common ground and shared understanding regarding the quality of the products, as well as to a redesign of the quality control procedures. This might seem rather limited considering all our efforts. However, the research project produced something which is precious, rare and not easily found in work organisations: a specific quality of dialogue, defined as both precise and simple, a specific dialogical genre, in which close joint observation of the work realities nurtures the dialogical process, and extraordinary dialogical spaces, in which the different research participants made an experience that may be robust enough to survive their evanescence. What gets first transformed in this research project may be the way the different partners look at each others' expertise on the production process; as well as the kind of dialogues that can happen in the company across hierarchical levels, the objects of these dialogues, and the positioning of the partners in this dialogue. This might be little, but this little experience is critically important for democracy and social innovation.

Concluding with Becker's words:

 "To have values or not to have values: the question is always with us. When sociologists undertake to study problems that have relevance to the world we live in, they find themselves caught in a crossfire. Some urge them not to take sides, to be neutral and do research that is technically correct and value free. Others tell them their work is shallow and useless if it does not express a deep commitment to a value position. This dilemma, which seems so painful to so many, actually does not exist, for one of its horns is imaginary. For it to exist, one would have to assume, as some apparently do, that it is indeed possible to do research that is uncontaminated by personal and political sympathies. I propose to argue that it is not possible and, therefore, that the question is not whether we should take sides, since we inevitably will, but rather whose side we are on" (Becker 1967, p.239).

## Acknowledgments

## References

Becker, H. (1967). Whose side are we on? *Social Problems*, 14, 3 (Winter, 1967), 239-247. DOI : https://doi.org/10.2307/799147

Becker, H. (2014). *What about Mozart? What about Murder? Reasoning from cases.* Chicago: Chicago University Press. DOI: https://doi.org/10.7208/chicago/9780226166520.001.0001

Clot, Y. (1995). *Le travail sans l'homme ? Pour une psychologie des milieux de travail et de vie.* Paris: La Découverte.

Clot, Y. (1999). *La fonction psychologique du travail*. Paris: PUF.

Clot, Y. (2008). *Travail et pouvoir d'agir*. Paris: PUF.

Clot, Y., Faïta, D., Fernandez, G., & Scheller, L. (2001). Entretiens en autoconfrontation croisée: une méthode en clinique de l'activité. *Education permanente*, 146(1), 17-25.

Daniellou, F. (2005). The French-speaking ergonomists' approach to work activity: cross-influences of field intervention and conceptual models. *Theoretical issues in ergonomics science*, 6(5), 409-427. DOI: https://doi.org/10.1080/14639220500078252

Guérin, F., Laville, A., & Daniellou, F. (1997). *Comprendre le travail pour le transformer: la pratique de l'ergonomie*. Editions de l'Anact.

Gustavsen, B. (2017). Action Research and the Promotion of Democracy. *International Journal of Action Research*, 13(2). DOI: https://doi.org/10.3224/ijar.v13i2.02

Kloetzer, L., Clot, Y., & Quillerou-Grivot, E. (2015). Stimulating dialogue at work: the activity clinic approach to learning and development. In L. Fillietaz & S. Billett (Eds) *Francophone Perspectives of Learning Through Work* (pp. 49-70). Springer International Publishing.
    DOI: https://doi.org/10.1007/978-3-319-18669-6_3

Markova, I. (2016). The Dialogical Mind. Cambridge: Cambridge University Press.
    DOI: https://doi.org/10.1017/CBO9780511753602

Le Guillant, L. (1984). *Quelle psychiatrie pour notre temps ?* Toulouse: Erès.

Lewin, K. (1946). Action research and minority problems. *Journal of social issues*, *2*(4), 34-46.
    DOI : https://doi.org/10.1111/j.1540-4560.1946.tb02295.x

Oddone, I., Re, A., Briante, G., & Clot, Y. (1981). *Redécouvrir l'expérience ouvrière: vers une autre psychologie du travail?*. Editions sociales.

Ombredane A., & Faverge J.-M. (1955). *L'analyse du travail*. Paris:PUF.

Simonet, P., Caroly, S., & Clot, Y. (2011). Méthodes d'observation de l'activité de travail et prévention durable des TMS (Methods for observating work activity and sustained prevention of Muscular-Squeletton Disorders *Activités*, 8-1, online April 15[th]2011, accessed October 20th 2018. URL : http://activites.revues.org/

Star, S. L., & Griesemer, J. R. (1989). Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, *Social Studies of Science*, 19, 3 (Aug., 1989), pp. 387-420. DOI : https://doi.org/10.1177/030631289019003001

Tosquelles, F. (2003). *De la personne au groupe.* Toulouse: Erès.
    DOI : https://doi.org/10.3917/eres.tosqu.2003.01

Vygotsky, L. S. (1999). *La signification historique de la crise en psychologie*. Paris: La Dispute.

Wisner, A. (1995). *Réflexions sur l'ergonomie*(1962-1995). Toulouse: Octarès.

## About the author

Laure Kloetzer is assistant Professor in Sociocultural psychology at the University of Neuchâtel. She is researching professional learning, informal learning, and adult development, as well as tight collaboration between professional and non professional researchers around social innovation, through the use of transformative research methodologies inspired by the works of L.Vygotsky. She is interested in how (esp. social science) researchers can create different collaboration frames with other citizens to support development and social transformation.

*Author's address*
Laure Kloetzer
Université de Neuchâtel
FLSH
Institut de Psychologie et Education
Espace Louis-Agassiz
2000 Neuchâtel
Switzerland