



DEVELOPMENTS IN ACTIVITY ERGONOMICS IN BRAZIL AND FRANCE

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Abstract

The aim of this text is to analyze the current stage of Ergonomics in France in order to reflect on the Brazilian situation. Using the situation in France as a 'mirror', we intend to discuss ways to rethink and advance Activity Ergonomics in Brazil. To this end, during the post-doctoral internship, 'immersion' in local life was carried out in order to understand the experience lived by professionals and researchers within the discipline, complemented by reading recent works, formal interviews, participation in events, formal and informal interactions and documentary research to complement the various information compose the material for analysis. Our results show that Activity Ergonomics in France is under the paradigm of intervention construction. The development of the discipline is due to the engagement of several researchers and the institutions that support it, and also stems from the historical capacity of the discipline to respond to social demands through its modes of intervention. In the case of Brazil, we find ourselves under the paradigm of application and defense of Ergonomic Work Analysis (EWA), which is explained by the characteristics of the training of ergonomists in Brazil and by the influence exerted by the mandatory performance of EWA in the standard. Overcoming this paradigm depends on the mobilization of the professional community, especially Brazilian professors and academic researchers, to re-discuss the training and practice of Ergonomics in Brazil, in light of current social issues. This urgent issue could be led by the Brazilian Ergonomics Association - ABERGO.

Keywords: Ergonomics; work; professional practice; research; intervention.

1. INTRODUCTION

This text is part of the activities developed within the project 'Innovation and transformation for the prevention of occupational risks' – ITAPAR, whose objective is to propose innovative actions for the prevention of work-related diseases. This is an international project funded by FAPESP (São Paulo Research Foundation), for the Brazilian team of researchers coordinated by Rodolfo Vilela, from the University of São Paulo, and by ANR

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(*Agence Nationale de la Recherche*) for the French team, coordinated by Alain Garrigou from the *Université de Bordeaux*.

The objective of this text is to analyze the current stage of Ergonomics in France in order to think about and debate the situation of Ergonomics in Brazil, in view of the direct influence of the former in our country and the permanent interactions between researchers from both countries (many Brazilians were trained in France).

However, our purpose is not to transfer or reproduce current methods and perspectives from France in Brazil, but, by having the situation of France as a 'mirror', to reflect on the ways and means to rethink and advance the Ergonomics of Activity in Brazil.

This concern is closely linked to the criticisms of the Ergonomics of Activity made by Vilela (2019), for whom the practice of Ergonomic Analysis of Work does not lead to actual intervention in the determinants of work, nor is it based on the protagonism of the workers involved. Now, if such statements may be valid in the case of the practice of Ergonomics in Brazil, it is known that they are not relevant in the French case (Rocha *et al.*, 2022).

But, contrary to Vilela, whose criticism was a strategy to promote the perspective of formative intervention based on the Change Laboratory - LM (Virkkunen; Newnham, 2013), our intention is to use such criticisms to promote the development of Ergonomics in Brazil.

We will initially present our methodology and methods carried out during a postdoctoral internship at the University of Bordeaux (carried out by two of the authors of this text), from May to July 2023. Then, we will discuss the main results of our reflection on Ergonomics in France, before discussing the perspectives that our findings open, to rethink the Ergonomics practiced in Brazil and finally, to make some final comments.

2. METHODOLOGICAL DEVELOPMENT

The ethnographic perspective (Elidrissi; Bouguerra; D'Souza, 2020), although subliminal, was present throughout our period in France. Let us explain: in order to understand the stage of development of a discipline with strong social implications, as is the case of Ergonomics, it is necessary to 'immerse' in local life to understand and describe the experience lived by professionals and researchers within the discipline, accessed through readings of recent works, formal interviews, participation in events, formal and informal interactions and documentary search to complement the various information.



2.1. Interviews

Free interviews were conducted with professional ergonomists and researchers and complement the reading of books favoring understanding the professional and research practice of Ergonomics in the current social, political and economic context.

Thus, three professional ergonomists were interviewed - two French, one a consultant and one an intern at the large company and one English, an intern at the large company -, four researchers and/or professors - three French and one English.

Initially, contact with professionals from Portugal had been planned. As this was not possible, we chose to get to know the reality of English Ergonomics, its contrasts and similarities with French Ergonomics. Aspects that we will not develop in this text.

2.2. Events and interactions

During the period, we held three presentations, two at the seminar of the research team, coordinated by Alain Garrigou, (Bordeaux, 09/05/23; 07/06/23) and one at the research seminar of the Ergonomics team of the *Centre de Recherche sur le Travail et le Développement* (CRTD) of the Conservatoire National des Arts et Métiers - CNAM (Paris, 29/06/23), coordinated by Cathérine Degoulet and Flore Barcelinni.

Meeting with researchers working in the project 'innovation and transformation for the prevention of occupational risks' - ITAPAR, both from the Brazilian and French teams (coordinated by Adelaide Nascimento), was held on 06/28/23.

Another activity was to participate in a class to present case studies in the field of psychosocial risks – RPS, in professional updating training at the *Université d'Aix-Marseille*, held on 07/03/23.

Finally, we had the opportunity to participate in the ODAM (*Organisation Design and Management*) Congress in Bordeaux (from 11 to 13/07/23). In a small congress (about a hundred participants), current issues were discussed, such as the global ecological issue and the necessary transitions, as well as the role of Ergonomics in designing work situations to favor them.

The main reflections and considerations about the development of the French Ergonomics of the Activity, below, result from the triangulation of readings, interviews and interactions with French colleagues and colleagues from other countries in the spaces that we were able to visit during the internship period.



3. FINDINGS

3.1. Posing the problem: the situation of Ergonomics of the Activity in Brazil

Vilela's (2019) criticism refers to the issue dear to Brazilian Ergonomics, that is, its (in)ability to transform work by relying on the protagonism of workers. Now, if the statement is not valid for all ergonomic actions, it is necessary to recognize that most of the actions carried out in Brazil are based on diagnoses of work situations without the consequent transformation and redesign of work. In a way, the presence of the method in Regulatory Standard 17 for more than 30 years has partly contributed to the situation (Jackson Filho *et al.*, 2021); In addition, the design methodologies, in most cases, were restricted to university research groups.

In the specific field of ergonomics, the specialization courses in ergonomics started at the end of the 90s were based on the formation of the CNAM in the 80s and 90s, without its evolution being considered in Brazil. The seduction of 'models of activity', of analytical capacity, in a way, distanced Brazilian researchers from the project and transformative engagement proper to the discipline.

Another important fact was its low recognition to deal with national social and economic demands and issues, its absence in the design and implementation of public policies (except in the case of those inherent to the field of Occupational Safety and Health) despite its originally public character.

Thus, it can be stated that the paradigm of the development of Ergonomics of Activity in Brazil continues to be that of the application and defense of the method of Ergonomic Analysis of Work (AET).

3.2. Institutional factors favoring current development in France

3.2.1. Historical engagement in meeting social and economic demands

The historical analysis of the discipline shows its engagement in understanding and solving problems of a social and political nature, such as the harsh physical working conditions in mining and steel in the sixties in Europe. The creation of the Ergonomic Analysis of Work resulted from the need to 'take researchers out of the laboratory' to know the reality of workers and contribute to the transformation of work situations. (Teiger; Lacomblez, 2013)

Topics such as the need to demonstrate the intelligence of workers, the inclusion of workers with disabilities, the training of trade unionists in Ergonomics, participation in projects, the development of computer systems, the confrontation of psychosocial risks, sustainable development, exposure to pesticides and the agroecological transition, industry 4.0, among



others, mobilized the ergonomics community, both research and practice, to intervene and produce knowledge over the last decades.

The '*College des Enseignants Chercheurs en Ergonomie- Ce2*' in defining the contours of training and research stated that the different research approaches share that all research must be initiated, or answered, from questions related to social or organizational demand. (Ce2, 2012a)

Finally, as Pierre Falzon suggests in the conclusion of his interview with Jean-Claude Sperandio:

'Organizations, societies, are currently faced with new challenges, due to new demands addressed to work and the seriousness of climate, demographic, political and ethical issues. Ready-made solutions are not appropriate. It is necessary to invent, innovate, and think about ways of managing organizations and public action that consider the urgency of social demands. Ergonomics has tools that allow it to contribute to this movement' (Falzon; Spérandio, 2023; p. 10-11; free translation by the authors).

3.2.2. A broad institutional framework that lays the foundations of the discipline and the profession

The broad development of the discipline, from the training of professionals, scientific research to professional practice, is supported by a wide range of Institutions.

Some of them predate the 2000s, but others instituted to meet the new policies of the French state, after the beginning of the European Community, for research and education. The reorganisation of the French University was influenced by the need to harmonise university education in Europe (Ce2, 2013).

Some institutions deserve to be highlighted, such as: the *Société d'Ergonomie de Langue Française* – SELF founded in 1963; the '*Association pour la Reconnaissance du Titre d'Ergonome Européen en Exercice – ARTEE*' created in 1994, on the initiative of SELF, for the recognition of diplomas and the issuance of the title of European ergonomist and young ergonomist; the '*College des Enseignants Chercheurs en Ergonomie- Ce2*', since 2004, promotes, participates in the structuring and protects the teaching of the discipline, as well as promotes and sustains research in the field of ergonomics; the association '*Reseau des Jeunes Chercheurs et Chercheuses en Ergonomie – RJCE*' was created in 2008 to bring together young researchers and also to support the development of research; not to mention other important institutions such as professional unions.



The first institution, SELF, which currently has 510 members, has promoted the history and development of the discipline through annual congresses, communication and dissemination activities, surveys on the profession, job offers and scholarships, among other actions.

The Ce2, for example, has played a fundamental role in recent years to protect the discipline from the profusion of training in nearby areas that claim the ergonomist diploma, since the profession finds a market in companies, on the one hand, but is not regulated, on the other.

From a practical point of view, Ce2 (2012) accredits the '*masters*' in Ergonomics that meet its precepts (agreed upon by its members) and also works with institutions for the evaluation of Higher Education and research.

In 2012, the Ce2 conducted a survey to learn about the working and health conditions of research professors in the face of the restructuring of French universities (Ce2, 2012b).

It shows concern about the future of the journals in the field (*Travail Humain, Activités and Pistes*) that need to be supported, as they constitute a basis for the progress of research and discipline (Ce2, 2017). In fact, journals are also fundamental institutions for the development of practice and research.

3.2.3. Training and research

University education in Ergonomics focuses on the final years of university education, complementing previous courses ('*filieres*' in French) in various disciplines, such as psychology, physiology or biology, social sciences, engineering, among others. Currently, thirteen *master's degrees* in ergonomics are offered in various higher education establishments.

A reference program was proposed by Ce2 containing the various knowledge for professional practice; functioning on man at work, on production and organization technologies, methods of analysis and intervention, on the regulation associated with ergonomics (Ce2, 2012a). It is important to note, as currently, the master's degrees offer a different discipline on the analysis of activity and work, a discipline aimed at training on the intervention itself.

In addition, there are different modalities of insertion in the master's degrees: either full-time or the so-called alternating training, in which students alternate time in companies and in



the classroom. Currently, the second modality has attracted a greater number of students in the discipline who receive a 'salary' while studying, and can be hired at the end of the course.

With the regulations of the 2000s in Europe, there was a restructuring of teaching and research in French universities, which conditioned the composition of larger research teams and/or the formation of Research Centers, grouping old laboratories, as was the case with the creation of the '*Centre de Recherche sur le Travail et le Développement – CRTD*' of the CNAM.

Likewise, some professors, as is the case of Alain Garrigou, are affiliated with a teaching unit (in this case, *IUT Hygiène et Sécurité*) and a research team (EPICENE - INSERM).

The training of researchers is offered in the doctoral programs of the various universities and higher education establishments, and the supervision of theses can only be done by full professors and professors who have the title of '*Habilitation à Diriger des Recherches – HDR*'.

Research depends on public or private funds; which in the case of Ergonomics is not a problem in view of the ability to contribute to the human, technical and organizational development of companies and institutions (Falzon; Spérando, 2023).

A modality of promotion of the doctorate, applied since 1988, consists of the realization of the so-called CIFRE thesis ('*Conventions Industrielles pour la formation et la Recherche*'), which involves the supervision of doctoral students, both by professors of a Research Center and by professionals from the industry. The Ministry of National Education and Research offers subsidies and, in return, the company ensures the payment of salaries in an employment contract.

3.2.4. Articulation between research, teaching and professional practice

Since most Ergonomics professionals are consultants, soon after graduation, the relationship between trainers/researchers and professionals is historically important through both supervisory practices and the realization of practice-oriented events such as '*les Journées de Bordeaux sur la pratique*' (Martin; Baradat, 2003). In addition, several of the company's internal professionals hold doctoral degrees (as well as several consultants, many working as professors (part-time)).

The development of the current of research on the practice of Ergonomics in the 90s and 2000s was fundamental to consolidate the practices of intervention in companies, especially aimed at the participation of ergonomists in industrial projects (Rocha *et al.*, 2022).



In addition, as recommended by Ce2, research in ergonomics should be linked to social and/or industrial demand, which evidently suggests the proximity of the research world to the 'daily life of companies', which is favored when there are professional ergonomists involved belonging to the company.

The relationship between internal professionals and research is also established with the realization of CIFRE doctorates that favor the treatment of current industrial issues and the production of cutting-edge knowledge. Evidently, if hired, the newly professional doctorates have already developed relationships with researchers during their course of writing their thesis in the company, which will have a positive influence on their career in the company and their insertion in the professional community.

In some cases, when the relationship between a given research and training center and certain companies is long-lasting, the development of concrete actions as well as the production of knowledge are mutually benefited. The most important example involves CREAPT, whose relationship with an aeronautical company began approximately 30 years ago (Degoulet; Buchman; Gaudart, 2022). This is one of the most relevant 'intervention and research' situations in the field of Ergonomics and Occupational Health.

3.3. Shared academic production and conceptual development

The reality of global warming and its direct consequences (forest fires, water crisis, climate change), the energy crisis caused by both the ecological issue and the war in Ukraine, as well as changes in work, such as digitalization (and the use of artificial intelligence) in production and service systems, the process of managing companies and public institutions, Among other aspects, they have impacted work and workers, and their health, posing concrete questions and demands for ergonomics.

The discipline is, however, empowered, or at least mobilized, to intervene and produce knowledge and meet these greater social demands after the conceptual and methodological developments of the last thirty years, such as the development and organization of spaces for debate (Raoni *et al.*, 2022), the idea of enabling intervention and organization , participatory design methods, among others (Falzon; Spérando, 2023).

Likewise, the presence in the debate with close disciplines, interested in work, on the promotion of the development of people and systems (Arnoud *et al.* 2022), on the democratization of labor relations (Clot *et al.*, 2021), on the intervention itself in work situations (Ullman *et al.* 2017) as well as participation in studies and interventions in multidisciplinary



teams, as in the case of combating pesticides (Galey; Garrigou, 2020), enable Activity Ergonomics to understand and intervene in the necessary 'transitions' of production, life, food, environmental protection and life (Renouard *et al.* 2020). Therefore, action in the field of management and public policies seems necessary (Falzon; Spérando, 2023).

3.3.1. Definition of research topics and knowledge production process

Topics such as health and work, safety conditions, democratization of company spaces, exposure to risks, digitalization of systems are evidently associated with Ergonomics, and the main training and research centers and/or the main researchers called to participate in public notices or meet the needs of private companies. The research objects articulate traditional issues and concerns about work with current social, economic and environmental issues, referred to above.

Various institutions, which promote research, as well as funding agencies, make regular calls on certain topics, as well as specific issues can be the subject of public notices from various ministries. Often, certain researchers, whose performance is recognized, are mapped and called upon to conduct research on specific problems.

3.3.2. Organization for thematic production and interdisciplinary debate

The role of public and private agencies and institutions and social actors influences the formulation of thematic demands for research in various areas. A recent example was the agreement between employers and workers, signed in 2013, on the topic of psychosocial risks and quality of life at work, which mobilized several studies in the field of Ergonomics, psychology and management (Detchassar, 2019; Clot *et al.*, 2021).

There is currently a debate around the theme involving the sciences of work and development. In the collection, organized by Arnoud *et al.* (2022), research from ergology, the Change Laboratory, Ergonomics, Activity Clinic, and Educational Sciences are gathered. It is interesting to note that the production of knowledge about a given object does not occur by chance, but results from a process of collective, progressive collaboration.

The organizers of the collection state in the introduction (Cerf *et al.*, 2022): 'The book originates from the reflections that took place both in the journal *Activités*, as well as in the congresses of SELF (2015, 2018) or the *International Ergonomics Association* (2015, 2018)' (Arnould *et al.*, 2021; p. 13). The theme of development resulted from Pierre Falzon's work



around the idea of 'enabling organization' and constructive ergonomics, which began in the early 2010s (Arnould *et al.*, 2021; Falzon; Sperandio, 2023).

The collection is therefore the result of texts by authors from various universities and the network organization that allows for fostering debate and contributing to the development of the theme in question. It results, therefore, from the debate between different disciplines, materializing the contributions and differences between the various disciplines in the various chapters. The work is of great value to other researchers, who have a range of conceptual and methodological options.

In the French scenario, there is also experimentation and the realization of major research based on multidisciplinary, as in the case of exposure to pesticides and carcinogenic substances. Ergotoxicology has contributed to researchers in health, epidemiology, anthropology, psychology, among others (Garrigou; Galey, 2021). The contribution of Ergonomics becomes, therefore, the knowledge of researchers from other areas, contributing to the diffusion of the discipline.

3.3.3. Conceptual and methodological development under a new paradigm

The hegemony of the Ergonomic Analysis of Work (AET) lasted until the mid-90s, when the book '*Comprendre le travail...*' (Guérin *et al.*, 2001) was published. The participation of ergonomists in industrial and service projects has put on the agenda the need to reflect on intervention and the role of ergonomists (Rocha *et al.*, 2022).

The vocabulary used, real work and prescribed work, workload, strategies and regulation, starts to lose space in congress communications and texts, being replaced by other terms such as margin of maneuver (or power to act), social and technical construction (Coutarel *et al.* 2015); other terms, such as demand and construction of the problem, but above all activity, Remain. The very expression 'Ergonomic Analysis of Work' is in disuse, being replaced by 'work analysis' or 'activity analysis'.

Leaving the role of analyst, external to the observed situations, the ergonomists in intervention 'enter the space of the company' engaged in the transformation, or in the construction of a process for the transformation of the situation that is requalified as 'enabling'. Although the centrality from the point of view of the activity remains inherent to any ergonomic action, the search for greater 'margin of action' is aimed not only at the workers in the work situation under analysis, but also at the actors of the company involved in the intervention that can influence the transformation process. This perspective, whose focus is intervention, is



taught in the '*masters d'ergonomie*', disseminated in the community and shared among the main researchers in the field. The focus on intervention also calls for a new reflection on instruments and techniques of analysis and their application in intervention (Nascimento, 2017). Thus, as concepts and theoretical framework, good methods and techniques are those that contribute to the intervention (Rocha *et al.*, 2022).

It can be said, therefore, that the paradigm that organizes the action of ergonomics in France is no longer that of the defense and application of the AET, but that of the construction of the intervention.

3.4. Current Challenges

For some of the interviewees, a lot of energy and effort was spent on protecting the discipline with the higher levels of Education and Research, after the reorganization of the French Universities. If the performance of Ce2 was fundamental, and many researchers engaged in it, there is a certain distance between the community of professional practice and research, and the need for greater involvement of professors/researchers with SELF.

On the other hand, in order to make a more effective contribution to this scenario of the crisis of humanity and the need for societal transitions, it seems necessary to occupy spaces and influence the elaboration and implementation of public policies, normally in charge of the intellectual elite at the service of the French State. Research on the relationship between ergonomics and public policy is underway under the coordination of Flore Barcelinni du CRTD of CNAM.

4. DISCUSSION

If, initially, Vilela's provocation led us to compare Ergonomics with ML, a mode of formative intervention (which aims at development through the Theory of Historical-Cultural Activity), the relationship between the practice of ergonomics and so-called 'developmentalist' methods were already part of the French scenario (Arnould *et al.*, 2022).

Thus, for us, the promotion of the development of ergonomics in Brazil should not be thought of from the point of view of comparison with another disciplinary or methodological perspective, such as the LM. Having the ergonomics of the French activity as a 'mirror' seemed to us the best method to create conditions to stimulate and promote reflection on the



development of Brazilian Ergonomics. This text did not intend to deepen the analysis of the Brazilian situation, but to stimulate this process later.

Our reflections suggest that the Ergonomics of Activity in France is under the paradigm of the construction of intervention, which sustains practice, research and academic training.

Likewise, the importance of the discipline, on the one hand, is due to the engagement of several researchers and the institutions that support and enable its development. On the other hand, in view of the historical capacity of the discipline to respond to social demands through its modes of intervention, there is an interest of companies and institutions in calling it (Falzon; Spérando, 2023).

In the case of Brazil, we are still under the paradigm of the application and defense of the method, which is explained by the characteristics of the training of ergonomists in Brazil – content of the modules and insertion only in *the latu sensu graduate program*. Another factor is the development of professional notarial practice of professionals, in order to comply with the former NR 17 and the obligation of companies to carry out the AET, and to protect companies or seek compensation for damages suffered by workers (Jackson Filho *et al.*, 2021; Rocha *et al.*, 2022).

In addition, there is little influence of the discipline with public institutions and companies, given the low capacity for intervention, to transform working conditions and participate in the confrontation of other social, economic and environmental issues currently underway.

Overcoming this paradigm depends on a strong mobilization of the professional community, especially Brazilian professors and academic researchers, to rediscuss the training and practice of Ergonomics in Brazil, in the face of current social issues. An urgent problem that could be headed by members of ABERGO.

5. FINAL COMMENTS

Analyzing the situation of Ergonomics of Activity in France and its developments, through our immersion in French society, was the objective of this collective reflection.

The elements described and analyzed, from readings, interactions and interviews, under the prism of the social and economic, institutional, theoretical, methodological and organizational scenario explain the current development of the discipline in France, which can



serve as a 'mirror' for Brazilian ergonomists to rethink their practices and promote the development of the discipline beyond the paradigm of the application of the method.

Such elements can, if put into debate in the ergonomics community and analyzed from the social demand in Brazil, favor the emergence of, perhaps, a new Brazilian Ergonomics of Activity.

REFERENCES

- ARNOUD, J.; BARCELLINI, F.; CERF, M.; PEREZ TORALLA, M.-S. (Org.) **Dynamiques développementales dans les interventions sur le travail** : entre héritages et perspectives. Toulouse: Octares Editions, 2022.
- BORDU, E.; LALLEMENT, M. VELTZ, P.; WEIL, T. (org.) **Le travail en mouvement**. Paris: Presses de Mines, 2019.
- CERF, M.; ARNOUD, J.; BARCELLIN, F.; PEREZ TORALLA, M.-S. Entrelacer développements et interventions dans les milieux de travail et de vie. In ARNOUD, J. et al. (org.). **Dynamiques développementales dans les interventions sur le travail** : entre héritages et perspectives. Toulouse: Octares Editions, 2022. p. 13-18.
- COLLÈGE DES ENSEIGNANTS CHERCHEURS EN ERGONOMIE. Formation et recherches en ergonomie, Paris: Collège des Enseignants Chercheurs en Ergonomie. 2012a. Disponível em: http://ce2-ergo.fr/rech_form/rech_form.pdf. Acesso em 22 de agosto 2023.
- COLLÈGE DES ENSEIGNANTS CHERCHEURS EN ERGONOMIE. Les enseignants-chercheurs en ergonomie et les évolutions organisationnelles dans les universités françaises. Paris: Collège des Enseignants Chercheurs en Ergonomie. 2012b. Disponível em: http://ce2-ergo.fr/rech_form/rech_form.pdf. Acesso em 22 de agosto 2023.
- COLLÈGE DES ENSEIGNANTS CHERCHEURS EN ERGONOMIE. Evolutions de l'Enseignement Supérieur et de la Recherche : quelles conséquences pour les formations en ergonomie. In: CONGRÈS DE SOCIÉTÉ D'ERGONOMIE DE LANGUE FRANÇAISE, 49, 2014, La Rochelle. Actes [...], Paris : Société d'Ergonomie de Langue Française. Disponível em : http://ce2-ergo.fr/productions/symposium_self_ce2_2014.pdf. Acesso em 28 de agosto de 2023.
- COLLÈGE DES ENSEIGNANTS CHERCHEURS EN ERGONOMIE. L'évaluation des enseignants-chercheurs en ergonomie : présent et futur. In: CONGRÈS DE SOCIÉTÉ D'ERGONOMIE DE LANGUE FRANÇAISE, 52, 2017, Toulouse. Actes [...], Paris : Société d'Ergonomie de Langue Française. Disponível em: http://ce2-ergo.fr/productions/SELF2017_table ronde_CE2_ Recherche_Final.pdf. Acesso em 28 de agosto de 2023.
- COUTAREL, F. ; CAROLY, S. ; VEZINA, N. ; DANIELLOU, F. Marge de Manoeuvre Situationnelle et Pouvoir d'Agir: des concepts à l'intervention ergonomique. **Le Travail Humain**, Paris, v.78, n.1, p.9-29, 2015. Disponível em: <http://dx.doi.org/10.3917/th.781.0009>. Acesso em : 22 ago. 2023



CLOT, Y. *et al.* **Le prix du travail bien fait**. Paris: La découverte, 2021.

DELGOULET, C.; BUCHMAN, W.; GAUDART, C. Les parcours, une opportunité pour penser et agir sur le travail : réflexions sur les espaces et le temps de l'intervention. In ARNOUD, J. *et al.* (organizadoras): **Dynamiques développementales dans les interventions sur le travail** : entre héritages et perspectives. Toulouse: Ocatares Editions, 2022. p. 199-214.

DETCHESSAHAR, M. (Coord.) **L'entreprise délibérée**. Refonder le management par le dialogue. Bruyères-le-Chatel: Nouvelle Cité, 2019.

ELIDRISSI, Y.R.; BOUGUERRA, N.; D'SOUZA, R.C. Enacting Etnography:

Three perspectives on Engagement with Political Communities. **M@nagement**, Paris, v.3, p. 109-113, 2020. Disponível em : <https://www.cairn.info/revue-management-2020-3-page-109.htm>. Acesso em: 13 jul. 2023.

FALZON, P.; SPÉRANDIO, J-C. Entretien de la SELF avec Pierre Falzon mené en 2023 par Jean-Claude Sperandio. 2023. Paris: Société d'Ergonomie de Langue Française. Disponível em: <https://ergonomie-self.org/wp-content/uploads/2023/07/falzon-pierre.pdf>. Acesso em 22 de agosto 2023.

GALEY, L.; GARRIGOU, A. A ergotoxicologia, da palavra aos conceitos e às metodologias. **Laboreal**, Porto, v. 16, n. 2, 2020. Disponível em: <http://journals.openedition.org/laboreal/16406>. Acesso em: 22 de ago. 2023.

GUÉRIN, F. *et al.* **Compreender o trabalho para transformá-lo**: a prática da ergonomia. São Paulo: Blucher, 2001.

JACKSON FILHO, J. M.; LIMA, F.; DONATELLI, S; SIMONELLI, A. P. Elementos da história da ergonomia no Brasil. In BRAATZ, D.; ROCHA, R.; GEMMA, S.. (Orgs.), **Engenharia do trabalho**: saúde, segurança, ergonomia e projeto. Campinas: Ex Libris. 2021, p. 117-134.

MARTIN, C.; BARADAT, D. **Des pratiques en réflexion**. Toulouse: Octares, 2003.

NASCIMENTO, A. Intervenir sur la culture de sécurité : la méthode du Jugement Différentiel d'Acceptabilité comme moyen d'analyse et d'action en ergonomie. In ULMANN, A. L.; WEILL-FASSINA, A.; BENCHEKROUN, A. (Orgs.), **Intervenir** : Histoires, recherches, pratiques. Toulouse: Ocatares Editions, 2017. p. 163-172.

RENOUARD, C ; BEAU, R. ; GOUPIL, C. ; KOENIG, C. **Manuel de la grande transition** : former pour transformer. Paris: Les liens qui libèrent, 2020.

ROCHA, R.; JACKSON FILHO, J. M; NASCIMENTO, A.; GARRIGOU, A. Social construction as a means of ergonomic intervention. **Gestão & Produção**, São Carlos, v. 29, e5022, dezembro, 2022. Disponível em: <https://doi.org/10.1590/1806-9649-2022v29e5022>. Acesso em: 22 de ago. 2023.

ULMANN, A. L.; WEILL-FASSINA, A.; BENCHEKROUN, A. (Orgs.) **Intervenir** : Histoires, recherches, pratiques. Toulouse : Octares Editions, 2017.



- TEIGER, C., LACOMBLEZ, M. **(Se) former pour transformer le travail** – Dynamiques de construction d’une analyse critique du travail. Québec: Éditions des Presses Universitaires de Laval, 2013.
- VILELA, R. Interfaces da Ergonomia com o Laboratório de Mudança. **Intervozes: trabalho, saúde, cultura**. Petrópolis, 4(1), 87-90, maio 2019.
- VIRKKUNEN, J.; NEWNHAM, D. S. **The Change Laboratory** – a tool for collaborative development of work and education. Rotterdam: Sense Publishers, 2013.