



A GREAT CHALLENGE FOR ERGONOMISTS: PRIMUM NON NOCERE

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Abstract

This essay presents Ergonomics as the only discipline, among the many that deal with work, whose central theme is the activity of the worker in a work situation - in other words, what the worker does to fulfill their tasks, their doing. It is up to the ergonomist to understand what, where, how, with what, with whom, when, how much and why the worker does it, to then understand what this doing does to them. The complexity of such task leads to a comparison between the work of the ergonomist and that of the doctor. Finally, and considering the difficult situation for workers all over the world, it is suggested that ergonomists, when doing their task, should also follow the Hippocratic principle of "first do no harm", the famous *primum non nocere*, known to doctors.

Keywords: Ergonomist, Activity, *Primum non nocere*.

There are countless disciplines that claim to be "work-related". For example, we have Labor Law, Labor History, Labor Sociology, Labor Anthropology, Labor Economics, Occupational Medicine, Occupational Physiology, Occupational Toxicology, Occupational Hygiene, Occupational Psychology, Occupational Psychopathology, Occupational Psychodynamics, Occupational Engineering, among many others. Each of them considers work from its own point of view and has its own objectives and methods for approaching it. There are several points of intersection between some of them, but each one maintains its own limits.

Ergonomics, which is perhaps the most recent of all (it is not even a hundred years old!), stands out from the others because it is the only one that has as its central theme the activity in a work situation, that is, what the worker does to meet the demands of his tasks, his doing.

The ergonomist, in turn, is the professional responsible for putting the teachings of Ergonomics into practice: his job is to analyze the work of others.

For some, this seems simple: all it would take is to observe someone working. In fact, many believe that an ergonomist would only need to "take a peek" at how a person works, at their posture, to understand everything. In reality, analyzing activity in a work situation presents all sorts of difficulties.

First, because the activity generally takes place within production units that are forbidden to anyone outside the company, and their secrets are kept under lock and key. Even

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when the ergonomist is part of the company whose activity he is going to analyze, he needs authorization from above. Second, because even those who have access cannot just walk in and start observing. The workplace is not a place for experimentation, as Jacques Duraffourg ², a former professor at the Ergonomics Laboratory of the National Conservatory of Arts and Crafts (CNAM) in Paris, used to say. On the contrary, it is where production, the nerve center of any company, takes place. Company management avoids the presence of outside observers as much as possible. Workers, regardless of the type of work they do, do not like being observed by others, especially because they know from their own experience that, in general, when this happens, they lose out.

It is also important not to be impressed by the work environment, whether because it is too modern or too precarious. There is a kind of bad habit – prejudiced – of making the presence of the worker invisible when visiting a workplace. Anyone who has ever been on a visit to a factory knows that the least noticeable thing is the worker, who seems invisible. This invisibility is not a metaphor, as Costa (2010) shows. Working as a street cleaner as part of an academic research project, he became literally invisible even to his own college colleagues, when he passed by them and no one recognized him.

Another major difficulty in analyzing activity in a work situation is that, through observation, one can only grasp its visible side (and even then, not always): gestures, movements, postures, perhaps some facial expressions, movements, some speech. All reasoning, all mental and cognitive activity, experience and *savoir-faire*, all fears, insecurities, threats, possible tiredness, possible drowsiness, pain, concern, as well as the zeal and joy resulting from a job well done, are not visible. Also invisible are the relationships between workers and between them and their hierarchical superiors, all the norms, rules and technical and disciplinary procedures to be followed and the punishments for failure to do so, the performance evaluation systems. Therefore, the visible side of the activity is just the tip of the iceberg. It is not enough to know the biomechanics of a given movement, nor the harm caused by carrying a very heavy load, much less to know how to use a certain procedure to assess a certain posture, no matter how scientific it may seem. Activity always involves the body and mind of the person performing it, and a good piece of advice, also from Duraffourg, is the following: if the activity seems predominantly physical, it is necessary to look for its mental

²To learn more about Jacques Duraffourg, see the tribute paid to him in 2008 by the *Société d'Ergonomie de Langue Française* (SELF), available at <https://ergonomie-self.org/wp-content/uploads/2017/02/DuraffourgJacques.pdf>.



side. And vice versa: if the activity is imminently cognitive, it is necessary to look for its physical component. No one works only with the body or only with the mind.

But why and for what purpose does ergonomics study activity in a work situation? Because this is the way in which one can discover, in a given job, what is good and should be preserved, and what is bad and should be eliminated; good or bad in relation not only to the health and safety of the worker (current and future) but also to their comfort. This is what the different schools of ergonomics say – because there are several of them – and the occupational health and safety legislation in Brazil, through the Ergonomics Regulatory Standard, better known as NR17 (Brazil, 2022). It advocates adapting working conditions to the psychophysiological characteristics of workers, exactly the opposite of what happens in practice, where it is the worker who has to adapt to their work. It also says that this adaptation is the employer's responsibility: the ergonomist would be merely the professional who would diagnose any “maladjustments” and offer suggestions on how they could be overcome.

The comparison between the work of an ergonomist and that of a physician may be enlightening. In both cases, the target audiences are vast. For physicians, they are all billions of human beings, regardless of age, gender, social class, nationality, religion, appearance, etc. For ergonomists, they are the professional activities of workers performing all occupations (including ergonomists and physicians), which number in the thousands and range from the oldest, such as midwives, for example, to the most current, such as those of the so-called “click workers”³. Our Brazilian Classification of Occupations (CBO) alone contains around ten thousand titles, including occupations and synonyms. The ergonomist was recently incorporated into it.

In both cases, there is no ready-made recipe to follow. Each person is unique and the exercise of each professional activity is unique. Therefore, both the doctor and the ergonomist need to choose, from all the knowledge acquired in their respective training, those that are most relevant to understanding the specific situation that presents itself to them. This is what the art of both the doctor and the ergonomist consists of, as Alain Wisner said⁴.

To do this, both parties must follow a kind of script. The first step is to try to reduce the constraints caused by their respective actions and aggravated by the differences in social status

³Also called microworkers, these are people who work from home, connected to specialized microwork platforms, which provide them with small tasks such as identifying an image, captioning a photo, or answering a questionnaire. They are paid per task and do not even know who the clients are. To learn more, see the article by Braz et al., 2023.

⁴To learn more about Alain Wisner, see the article by Vidal & Santos, 2023.



between, in one case, the doctor and the patient and, in the other, between the ergonomist and the worker.

For the doctor, it is important to try to reduce the patient's anxiety due to their concerns about their health and what will happen to them. They need to be courteous and delicate and try to make the patient as comfortable as possible, regardless of their social status.

Bernardino Ramazzini – the father of Occupational Medicine – wrote more than three hundred years ago:

“the doctor who is going to attend to a proletarian patient should not limit himself to putting his hand on the pulse, in a hurry, as soon as he arrives, without informing himself of his condition; he should not deliberate standing up about what is or is not appropriate to do, as if he were not playing with human life; he should sit with the dignity of a judge, even if it is not in a gilded chair, as in the case of magnates; he should even sit on a bench, examine the patient with a cheerful expression and observe carefully what he needs from his medical advice and his compassionate care” (Ramazinni , 2000, p.23).

The doctor's first step is to find out about the patient's condition and listen to what the patient has to say, first spontaneously and then in a more directed manner, using a set of questions. These first statements already allow him to formulate his first diagnostic hypotheses. With these in mind, he can proceed to a physical examination of the patient, the results of which should improve the hypotheses previously formulated. Only then, if necessary, can the doctor order some laboratory tests or other more specific tests to confirm or deny his diagnostic hypotheses. The objective is to find out whether or not the person being treated has any changes in their health and, if so, what they are and how serious they are, in order to finally propose some treatment. However, the doctor's intervention does not stop there. He must monitor the treatment and, if it does not work, try to find out why and review his strategy.

However, not all doctors act as described. Some do not even talk to the patient, especially if the patient is poor. Others start by asking for extensive lists of tests, as if they could easily find out what the patient is suffering from. As a result, they not only do not offer the patient the best available care, but sometimes they can even harm the patient with incorrect diagnoses.

The ergonomist should also start by trying to reduce the discomfort and strangeness that his presence in the workplace causes to the workers. Introduce himself to them, explaining who



he is and why he is there, at whose request; what he intends to do, why and how; ensure that the results of his analyses will be presented to him, as well as to whoever requested them (supervisory bodies, for example) and to the employer. Ask permission to observe them and try not to interfere with their work with his presence. Explain to them that he will eventually have to take some measurements and the purpose of them. Finally, give them assurances that the objective of his intervention will be to improve working conditions, but that this will be the responsibility of the employer, to whom the results will be sent.

Only then will the ergonomist begin his work, seeking to understand what the worker's activity is, that is, what he does to meet the demands of his tasks. First, he needs to find out what his tasks are, how long they last, the required rhythms, whether or not there are formal procedures and what they are; what type of equipment, tools and information the worker needs, in what environment and at what time of the day it takes place. If that activity requires the collaboration of other people, from whom and at what time, what type of control it is subject to and by whom, and how it is evaluated. It is therefore necessary to understand what the worker does: how he does it, where he does it, with what he does it, when he does it, how much he does it, why he does it, and then understand what this doing does to him. It is logical that such a vast number of questions cannot be answered all at once, nor just by observing the worker. The ergonomist also needs to talk and ask you things that only he, the worker, knows, because he is the one who knows his work best and, even more, the only one who knows the repercussions of his work on your health.

As the issues are clarified, the ergonomist will be able to formulate diagnostic hypotheses about the repercussions of that activity on the comfort, safety and/or health of the worker. This may or may not require measurements or quantitative evaluations of some variables. However, in general, the need for these measurements is a more formal requirement, based on the erroneous but widely held idea that an analysis would only be objective or scientific if it presented numbers. Numbers can be misleading and, unfortunately, this is often the case, whether or not the analyst intends to do so.

Once the analysis is complete, the ergonomist must write a report explaining what he or she has done. This report must be as clear as possible so that someone unfamiliar with the work, such as employers or supervisory bodies, can understand it. The report must also outline the steps that employers should take to address the problems found.

As with doctors, not all ergonomists act as described. They do not bother to talk to the worker and, in a hurry, apply a series of tests that, they believe, can measure “nonconformities”



or “risks”. Many do this because they have been taught this and do not know how to do it differently. Others do it because they follow orders from their employers. Like all workers, ergonomists and doctors are also often forced to do what they do not think is right and not to do what they think is right, which causes suffering or cynicism, as revealed by the studies of Psychodynamics of Work by Christophe Dejours for decades, particularly in his book “The Banalization of Social Injustice” (Dejours , 1998).

Some additional clarifications: just as, after a confirmed diagnosis, it is not the doctor who performed the diagnosis who is solely responsible for solving the patient's problem – he or she may have to refer the patient to a specialist, or, for example, the patient may not be able or willing to undergo the proposed treatment – it is also not the ergonomist's responsibility to solve the diagnosed problems, which may require the presence of other specialists, such as a psychologist, production engineer, designer, physiotherapist, or architect. Furthermore, the responsibility for changes in the work situation lies with the employers.

I believe that the conditions and organization of work are what they are because employers decide to take the risks of maintaining them (for reasons of cost or economic or political power) and workers accept to submit to them (for fear of losing their jobs, disorganization, fatalism). It is therefore not a technical issue, but a political one, which depends, at any given moment, on the correlation of forces between employers and employees, the possibility of negotiation between them, and the outcome of that negotiation. Nor is it a management issue, as management gurus would like to suggest, promoting management shocks as the panacea for all ills, in private and public companies, and directly or indirectly devaluing all forms of organization and unionization of workers.

Life is not easy for most workers around the world. Unemployment, informalization, outsourcing, uberization, in short, all forms of job insecurity are accompanied by increased workload, chronic staff shortages, extreme partialization of tasks, micro-salaries for maximum efforts, accidents and illnesses; reduction of labor and social security rights, and relaxation of monitoring of working conditions. The situation is so serious that the International Labor Organization (ILO) has, for years, been calling for “decent work” (which means that there is a lot of... indecent work) all over the world. This precariousness and devaluation of work is related to low levels of unionization (OECD, 2019 apud Lucio, 2023) and worker organization, among other reasons.

In this scenario, considering the harm that a hasty and inattentive ergonomic analysis can cause to the well-being of workers, and continuing the comparison between the work of an



ergonomist and that of a doctor, it seems to me that the greatest challenge for ergonomists – the theme of this issue of the Revista Ação Ergonômica – is to follow the Hippocratic precept *primum non nocere*, which could be translated as “first of all, do no harm” or “first of all, do no harm”, known to doctors.

And what would be the harm? How could the ergonomist not harm the workers?

This is a discussion that would need to be held by ergonomists themselves and here is my suggestion in this regard.

As a way of collaboration, I would tell fellow ergonomists to avoid participating in any practices that deliberately humiliate, disrespect, or devalue workers; that deceive or mislead them; that denounce them; that lie to them or threaten them; that ergonomists should not accept participation in projects or analyses for which they do not feel adequately qualified; that they should not accept blackmail and disrespect; that they should not do their work carelessly, that they should demand better training. In short, that the results of their work should not contribute to increasing the suffering of workers. This is not an easy task, nor is it exclusive to ergonomists. But it is worth tackling.

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