

**WELL-BEING, PREVENTION, RISK**  
**BENESSERE, PREVENZIONE, RISCHIO**  
**BIEN-ÊTRE, PRÉVENTION, RISQUE**  
**BIENESTAR, PREVENCIÓN, RIESGO**  
**BEM-ESTAR, PREVENÇÃO, RISCO**  
**WOHLBEFINDEN, VORBEUGUNG, RISIKO**

**EBOOK OF THE INTERDISCIPLINARY RESEARCH PROGRAM**  
**“ORGANIZATION AND WELL-BEING”**

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*Abstract*

The etymology and the development of the meanings of well-being, prevention and risk, as well as their relationships, are presented and discussed. It is reminded that the World Health Organization defined health as physical, mental and social well-being, and that the European Union prescribed a general and programmed primary prevention, integrated with the design of work situations. However, current interpretations and practices mistake well-being with wellness, and prevention with the management of existing risks, while usually attributing the responsibility to the acting subjects in the workplace. The Interdisciplinary Research Program “Organization and Well-being”, for over three decades, has interpreted well-being as a perfectible process, and outlined pathways of work analysis that actually carry out primary prevention.

*Keywords*

Well-being, Prevention, Risk, Work analysis, Organizational action.

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## Well-being, Prevention, Risk

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### Well-Being\*

(Italian *Benessere*; French *Bien-être*; Spanish *Bienestar*; Portuguese *Bem-estar*; German *Wohlbefinden*)

*Well-being* is a word composed by the adverb “well” and the verb “being”. This term appeared in the XVI Century to designate the satisfaction of physical need. After the XVIII Century it indicated the material situation allowing to satisfy the needs of existence. The notion of well-being in economics, sociology, political science, and more precisely that of “social well-being”, was used in reference to a society as a whole, as it includes wealth, access to goods and services but also the degree of freedom, pleasure, innovation and environmental health. “Economic well-being” is defined, more strictly, as the aspect of social well-being that can be referred to monetary parameters. Since the mid XX Century the meaning connected to health affirmed itself, as a result of a notion that changed the order of values in relation to the notion proper of social sciences.

The World Health Organization (WHO), since its foundation in the second half of the '40s, formulated the idea of “health” in terms of physical, mental and social well-being. This idea is opposed to the ancient negative definition of health as absence of disease. In positive terms, it emphasizes the priority of prevention and health promotion over the cures, while connecting at the same time the body and the mind to the social dimension of the person. Hence, well-being means health in its widest sense, in all its aspects, and in an

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\* A different version of this first section, concerning the concept of well-being, has been published already in the journal *Laboreal*, 2006, 2, 1: 62-63. We are grateful to the journal for authorizing this new publication.

active way. The new notion becomes shared, it is promoted internationally and received within the legislation of several Countries.

WHO then enriched and specified further such formulation, in particular with the Alma Ata conference in 1978, and the declaration of objectives of the “Health for all by the year 2000” and the Ottawa Charter in 1986. What health means does not corresponds to a natural state, but to a social construct, as it is recognized that the promotion of well-being cannot be imposed but must be administered autonomously by each society in relation to its own culture, inscribed within the local context, consistently with its social and geographical reality. Well-being, once thusly defined, should not be considered neither statically and univocally, nor as a desired state that is impossible to reach. It should be understood as a *perfectible process* to be pursued, as indicated by Giovanni Rulli within the Interdisciplinary Research Program “Organization and Well-being”. The needs and goals of well-being are variable both in relation to the diverse contexts, over time, and in relation to the possibility of *continuous improvement*.

*Work* is directly interested by this innovative conception of health. The mixed Committee WHO/ILO (International Labor Organization) about health at work formulated in 1995 a “definition of health at work” which rests on the same principles. A European directive (89/391/EEC), translated into national laws by the member States of the Union, prescribed a *general, programmed, primary prevention, integrated in the design of work*. Prevention is “primary” when it contrasts the very occurrence of risk: it is the highest degree of prevention, in relation to the action concerning the existing risk or, worse, the full-blown harm. Thus, the norms prescribing primary prevention require an analysis and an intervention that are both carried out iteratively, founded on objective criteria, articulated comprehensively on the entire work situation, and aimed at the control of workers’ health and safety. Outside of the European Union, several Countries adopted similar norms.

This innovative vision has ancient roots. Reflections and studies about the relationship between *well-being* in the workplace and the *analysis of work*

have developed during the entire XX Century, even though not constantly and with different outcomes.

At the beginning of that century, Emil Kraepelin and Hugo Münsterberg, students of Wilhelm Wundt, founded the first laboratories of psychophysiology, aimed at studying “fatigue at work”. Max Weber related such investigations with the studies in economics and business sociology for the research of Verein für Sozialpolitik. Luigi Devoto promoted occupational medicine, a new discipline with clear preventive intentions, by stating that “the real patient is work”.

These research interests began during the same years in which Frederick W. Taylor and Henry Fayol proposed, respectively, principles of “scientific management” and “general administration”. The functionalistic vision of society, firms and industrial work, that Taylor’s and Fayol’s theories already presuppose, became the explicit orientation of the Human Relations stream, initiated by Elton Mayo and his school during the Great Depression of 1929-30. This new approach combined the “classic model” of organization with concepts such as “flexibility” and “work satisfaction”. Its dissemination emphasized the “integration” of workers in the system, while the studies on fatigue at work disappeared and occupational medicine strayed away its founding principle.

Between the ‘40s and the ‘60s Georges Friedmann tried to rethink about well-being, in face of the excesses of “industrial mechanicism” and the conditions of alienation, while opposing at the same time to Taylorism and Human Relations, particularly to their functionalist foundation. He proposed a *Sociologie du travail* as a widely interdisciplinary approach (notwithstanding its denomination), whose first step is represented by controlling the physical and mental health of workers, to which positive interventions are added, aimed at a “threefold valorization: intellectual, moral and social”. At the end of the ‘40s, a new stream of work-related studies was founded in England: *Ergonomics*. It was presented as an interdisciplinary encounter putting together biomedical, psychological and technological knowledge, in order to “adapt work to man”. In the ‘50s the *Ergonomie* began in France and Belgium, again on an

interdisciplinary footing, whose goal is to “understand work to transform it”. Its approach is different from the Anglo-Saxon’s as it studies the “activity” of the operators in concrete work situations. The almost perfect coincidence in time of these streams, the Friedmannian themes of well-being at work and the redefinition of health in positive terms by the WHO, leads to hypothesize an influence, although indirect, between these programs. In the subsequent decades, however, a development of the initial goals cannot always be found within the articulated evolution of work sociology and ergonomics.

Thus, the notion of well-being and its relationship with work have a long, non-linear history. However, it is also necessary to consider the different interpretations that concern them. It would be wrong to believe that the “classic model” theories of organization did not take into account well-being. Taylor, Fayol, Frank. B. Gilbreth, as well as Henry Ford, all dealt with it explicitly. However, their view of well-being of work implied that workers could realize their optimal well-being by fully adapting to the system’s needs. In the same way, according to the theories of flexibility and satisfaction at work, which developed since the Human Relations stream to nowadays, well-being is a state that has to be necessarily derived from the optimization of system’s functioning. This is well proven by numerous studies that, since the 50’s, focus on the connections between “motivation, productivity and satisfaction”, “stress and role conflicts”, or on “quality of work life”.

Well-being, as conceived in the way that developed after the indication of the WHO, obviously cannot play a role in theories presupposing the “pre-determination of system” in relation to the acting subjects. Similarly, it cannot play a role in theories according to which work situation is a “socially constructed reality”, recognizable *ex-post*, which imposes itself with its constraints over the social actor.

The WHO’s definition, and the idea of well-being as a *perfectible process* developed in the “Organization and Well-being” Program, require a theory that conceives work as a *process* as well. A process of actions and decisions, always changing and improvable, which may incorporate well-being in its design and

in the continuous transformation by the same subjects that are involved in it. This is the challenge for work disciplines in the face of well-being.

### **Prevention**

(Italian *Prevenzione*; French *Prévention*; Spanish *Prevención*; Portuguese *Prevenção*; German *Vorbeugung*)

The term *prevention* appears in the late Latin *praeventio*, derived from classic Latin *praevenire*, which literally signifies “to come before”, from which originates the figurative meaning of “to anticipate”. Similar terms are *providere*, “to take provisions” and *praevertere*, “to keep something from happening”. Since the XVI Century, *prevention* acquires the meaning of “precautionary measure” in order to impede something unpleasant.

The “modern” prevention was born at the beginning of the XVIII Century, with the first analysis of the relationship between work and illness. Bernardino Ramazzini, professor of Theoretical and Practical Medicine first at the University of Modena, and then at the University of Padua, shows the harmfulness of work, which at the same time provides livelihood (*Varia et multiplex morborum seges, quam non raro artifices quidam extrema sui pernicie ex iis artibus, quas exercent, pro lucro referunt ...*).

Towards the end of the same century the first of nine volumes of the treaty of “medical police” by the German physician Johann Peter Frank (1745–1821), teacher in Vienna and Pavia, was published, while the remaining volumes were also published within almost fifty years, between 1779 and 1827. The medical police has the ambition to improve the hygienic and public health conditions, on the one hand through a complete identification of the main social illnesses and their causes, on the other hand through laws prescribing ten actions and behaviors that would protect health. Both public medicine and the so-called “social” medicine owe a lot to Frank’s work, developed within the cultural environment of Jean-Jacques Rousseau’s enlightenment. It is worth recalling the reflections, also from central Europe, about hospital hygiene by the

Hungarian physician Ignác Fülöp Semmelweiss (1818-1865), highly lauded but persecuted discoverer of septicemia's cause at Vienna's polyclinic in 1846, and also about public and environmental hygiene by the chemist, physiologist and hygienist Max Joseph von Pettenkofer (1818-1901).

The notions of *primary prevention* (aimed at decreasing the occurrence of disease by intervening of "risk factors" and "pathogenic causes" before these lead to the manifestations of their effects), *secondary prevention* (concerning the early diagnosis and therapy) and *tertiary prevention* (aimed at preventing disabling outcomes and death) were established within the biomedical field. Such a distinction shows today a significant rigidity. It induces to disconnect the possible interventions and to define the areas of interest and intervention of the respective concerned biomedical disciplines: hygiene and prevention, diagnostics and therapy, rehabilitation. Similarly arbitrary appears to be the distinction, present in the vocabulary of prevention in work and life environments, between "prevention" (primary), "protection" (from risk) and "precaution, caution" (about risk hypotheses). Prevention, meant as primary, must be necessarily based on a principle of precaution, must be addressed towards plausible hypotheses of risk and also extended to protection when harmful agents are admitted in life and workplaces (which, however, should not happen) or when conditions of a-specific risk exist, as in the case of stress.

Prevention, in its full sense, requires actions aimed not only at *avoiding* the contact between harmful agents and humans, but also at *precluding the activation* of risk conditions, thereby excluding the manifestation itself of the harmful agents. This is indeed what the general European norm on prevention in the workplace establishes (directive 89/391/EEC), which conceives prevention as *primary, general, programmed and integrated within the conception of work*.

This definition, logically and legally founded, implies that prevention concerning workplaces is based on an assessment that must be objectively grounded on documented criteria, iterative, extended to the entire work



situation, conceived *ex-ante* and in general terms, as well as integrated within the design of work situations for continuous improvement of their conditions.

Thus, it appears crucial to understand how the analysis and the interpretation of work situation can be conducted for the *primary prevention of illnesses, injuries, discomfort and suffering at work*, that is, to make choices that are consistent with production goals and well-being perspectives for the people involved. A truly primary prevention requires first of all recognizing the unfoundedness of any theoretical or economic pre-determinations, because in work situation – just like in life – everything is the result of choices that can always be modified. Therefore, it is necessary to overcome the design and structuring criteria of work that presuppose the adaptation of acting subjects to system constraints or contingencies.

Widespread practices, like for example the assessment of “task fitness” or “risk factors” are completely inadequate for prevention. The assessment of task fitness is based on the acceptance of stable, unchangeable attributions of elementary tasks, of tayloristic origin, to valid and adaptable people, thereby making it possible, in reality, the substitution of the less adequate subject with the “healthy and strong” subject. If one accepts that risk depends on “factors”, it is presumed that risk is necessarily present, instead of investigating the conditions that may activate it as a consequence of human actions. In the same way, it is necessary to accept the misleading attributions of positive value to the concepts of “flexibility” and “satisfaction at work”, derived from the functionalist sociology and social psychology. Flexible is, in its etymological meaning, something that adapts easily; in the workplace, it concerns the adaptation of subjects to organizational prescriptions. The satisfaction for attributed tasks and their execution is not necessarily associated to well-being; on the contrary, it is very often associated to physical, mental and social overload, leading to pathological consequences, sometimes serious and even deadly ones.

The approaches that propose to associate well-being at work to a “good organizational climate”, or to workers’ resilience, or even to their good physical

and psychological fitness or, finally, to an alleged increased freedom of choice about working times and places, just like in the various forms of smart working, do not implement prevention. These are nothing but developments of the same perspectives that, since the early decades of the XX Century and during all this time, claimed to promote more favorable work conditions without actually recognize the workers' centrality, but instead ascribing to them the responsibility of managing risks and harms which derived from choices that presumed the pre-determination of the system.

The activity of prevention in workplaces require the *analysis of processes of action and decisions*, which configure both the current situation and the design of future situations: an analysis allowing to both interpret the congruence between structuration choices, technical choices and choices about the goals, and to incorporate within goals the well-being, together with the effectiveness and the efficiency of each process. The Interdisciplinary Research Program "Organization and Well-being" outlined this pathway since the 80's, illustrated its theoretical and methodological foundations, and showed concrete realizations in many work processes, both in manufacturing and in services. The work design and structuration choices always prove to be improvable, within this pathway. Well-being ceases to appear like a sort to temporary "state", and primary prevention like a "utopia": they are, just like the work process, *perfectible processes*.

### **Risk**

(Italian *Rischio*; French *Risque*; Spanish *Riesgo*; Portuguese *Risco*; German *Risiko*)

The Greek term *κίνδυνος* indicates *risk* and *danger* in ancient philosophy, and it expresses, in general, the negative aspect of possibility. The etymology of "risk", in modern languages, derives from ancient Italian *risco*, from Latin *resicare*, "to take away by truncating". Since the XVI Century the term's meaning has always been associated to the idea of *possibility*, and designated a

negative event, more or less predictable, so that “to risk” is the same as “to expose oneself to a possible downside”, through behaviors, and not by coincidence.

The concept of risk as possibility of harm for health is typically, and understandably, applied to pathologies with a more significant impact in terms of mortality or morbidity. Hence, risk is specifically studied, and a quantitative assessment of it is usually given, in the realm of cardiovascular pathology (based on data related to blood pressure, body weight, cholesterol etc.), in neoplastic pathology (exposure to harmful agents classified according to categories based on evidence about the relationship between exposure and cancer, as suggested by the International Agency for Research on Cancer, IARC), but also in other diseases with a relevant impact on disability (dysmetabolism, cognitive degeneration, etc.).

The most rigorous definition of risk for health is drawn from the well-established use in epidemiology. The notions of *relative risk* (RR = ratio between the effect on exposed individuals and the effect on non-exposed individuals) and that of *attributable risk* (AR = difference between the effect on exposed individuals and on non-exposed individuals) are utilized. Such notions are aimed at providing evidence and weight to differences or proportions of negative events (“observable damages”) within a population, and over a certain period, in relation to a different population or to the general population. This allows, for example, to state that a population exposed to an harmful agent, with a certain concentration for a certain period has higher probability of becoming ill – usually after a certain time interval free of illness (latency) – with a statistical measure of such difference. The notion of *etiological ratio* (ER = ratio between AR and effect on exposed individuals) completes the argument allowing to hypothesize, again in statistical terms, “how much” of the manifested pathology can be attributed to the exposure: for example, how significant is the contribution of inhaling asbestos to the manifestation of pleural mesothelioma – which is possible even in populations that are not exposed to asbestos.

Another definition considers risk for health as a “product” between “probability of occurrence” of a certain event and “damage” generated by such event. It is widespread in the field of prevention and safety in the workplace in relation to the issue of “risk assessment”, and it is also indicated in the guidelines (*Guidance on risk assessment at work*) attached to the European framework directive about prevention, 89/391/EEC: “... Probability that the potential level of damage is reached in the conditions of use and/or exposure, and possible size of the damage itself ...”.

Notwithstanding the sources’ authority, one can observe that this is a tool to “classify” risk, not a definition of the concept of risk. The classification is based on an hypothetical scale with a limited number of options (usually  $16 = 4$  levels of probability  $\times$  4 levels of harm) which are grouped in risk “classes” ( $R \leq 2 =$  low,  $3 \leq R \leq 5 =$  medium,  $6 \leq R \leq 9 =$  high,  $R > 9 =$  very high) in order to prioritize the interventions, from the less short to the shorter term. One can legitimately doubt about the scientificity of a method that arbitrarily groups in classes a relationship between completely different “entities” to whom is attributed a “numerical score” absolutely similar. The calculation thus is quite deceiving, as the daily experience on hygiene and safety at work proves: indeed, very different realities correspond to the same “value” resulting from the multiplication “P  $\times$  D”. Thus, a discrepancy between the tool and its purpose is evident.

The *danger* (Italian *Pericolo*; French *Danger*; Spanish *Peligro*; Portuguese *Perigo*; German *Gefahr*) is generally meant as equivalent to risk and associate to *damage* (Italian *Danno*; French *Dommage*; Spanish *Daño*; Portuguese *Dano*; German *Schaden*).

The concept of *danger* for health is referred to what a certain “harmful agent” may imply, its manifestation with a certain frequency within the population; it may also concern either a property or an intrinsic quality of a certain “entity” or “factor” (for example, materials or equipment, work methods or practices) with the “potential” of cause damage. In both meanings, it does not add anything to the concept of risk. Indeed, on the one hand it does

not explain those links between agents and consequences which escape the cause-effect relation (for examples, it is hard to imagine what the intrinsic danger in the case of stress would be). On the other hand, it always refers to a relation: between agents, substances, conditions and individuals, which are different from each other, sometimes in very relevant ways. Thus, it is preferable to disregard the concept of danger and only utilize the concept of *risk*, meant as possibility that a damage is present, and *risk of*, as a specification of what could be present (for example, risk “of” injury, “of” professional illness etc.)

What may activate a risk (for example, smoking, noise, asbestos, work on scaffolding, etc.) is usually called “risk factor”. In the epidemiological literature, risk factors are conceived not so much as “determinants”, but as “damage agents”, and are often grouped in classes that refer to risk classes: physical, chemicals, etc. This approach leads to the identification of a class of so called “psycho-social” risks, which include stress, suffering and violence at work, moral harassment and sometimes even musculoskeletal conditions. However, it seems difficult to identify the “factors” that may activate such risks, according to the framework usually utilized for the risks with a physical or chemical origin. This implies significant problems for the safeguard of health, both in workplaces and in general, and a possible drift towards an attribution of responsibility about “managing” such risks to the subjects that are exposed.

Within the “Organization and Well-being” Interdisciplinary Research Program it has been emphasized, since the ‘80s, that this approach presupposes solely a *causal explanation*, in terms of either necessary or probable cause-effect relations, derived from the physical sciences and chemistry. The *functional explanation*, also proper of the natural science as interested in living organisms, is not considered either, even though the “functions” of every organ and every functional apparatus are studied in relation to the role they play for the organism’s life and development. As a matter of fact, biomedical disciplines combine the functional and the causal explanations: for example, only the

knowledge of the auditory apparatus allows evaluating, in causal terms, the impact and the consequences of a certain noise, its loudness and its duration.

It is also completely ignored the *conditional explanation*, which is aimed at shedding light on causal relations, not in reference to laws or empirical homogeneity like in linear cause-effect relations, but based on the comparison of *conditions* that may originate the event to be explained. The identification of *objective possibilities* proceeds by disregarding every condition that turns out to be merely accidental within the event dynamics, in order to recognize the condition that is *adequate* to the manifestation of the event itself.

This is the most suitable route to identify what may activate a risk, any risk. For example, the relation between the vibrations generated by a chainsaw and the damage to the hand and the arm, or between inhaling asbestos and damage to the lungs, are properly investigated by biomedical disciplines in terms of functional explanation and inductive probability. Nevertheless, if one aims to identify the origin of risk, and the human actions from which it depends, the interpretation of the adequate conditions for its activation is not only preferable but also necessary. Indeed, there is no doubt that everything that constitutes a work situation or, more generally, a life situation – places, environments, materials, tools, methods of action – is the outcome of choices. Hence *prevention*, the activity aimed at *avoiding risks*, must concern such choices.