

The Holistic Claims of the Biopsychosocial Conception of WHO's International Classification of Functioning, Disability, and Health (ICF): A Conceptual Analysis on the Basis of a Pluralistic–Holistic Ontology and Multidimensional View of the Human being

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The International Classification of Functioning, Disability and Health (ICF), designed by the WHO, attempts to provide a holistic model of functioning and disability by integrating a medical model with a social one. The aim of this article is to analyze the ICF's claim to holism. The following components of the ICF's complexity are analyzed: (1) health condition, (2) body functions and structures, (3) activity, (4) participation, (5) environmental factors, (6) personal factors, and (7) health. Although the ICF claims to be holistic, it presupposes a monistic materialistic ontology. We indicate some limitations of this ontology, proposing instead: (a) a pluralistic–holistic ontology (PHO) and (b) a multidimensional view of the human being, with individual and environmental aspects, in relation to three levels of reality implied by the PHO. For the ICF to attain its holistic claim, the interactions between its components should be based on (a) and (b).

Keywords: *biopsychosocial model, disability, ICF, participation, pluralistic–holistic ontology*

I. INTRODUCTION

To do justice to different human needs and the rights and duties of people, holistic descriptions of human functioning and disability are required from the health and social security services. There are needs for medical care and medical and occupational rehabilitation, there are rights to benefits when certain medical conditions are fulfilled, and there is a duty to earn one's living as far as possible. To make precise descriptions and reasonable assessments of complex human phenomena, the human being should be seen as a whole and in environments.

The World Health Organization's (WHO's) International Classification of Functioning, Disability and Health (ICF) presents itself as a synthesis of two models of human functioning and disability: the *medical model* and the *social model*. According to the former, disability is seen as "a problem of the person, directly caused by disease, trauma or other health condition, which requires medical care provided in the form of individual treatment by professionals" (WHO, 2001, 20). Accordingly, medical care is looked upon as the main issue of disability policy. According to the social model, disability is "not an attribute of an individual but rather a complex collection of conditions, many of which are created by the social environment" (WHO, 2001, 20).

By integrating the medical and the social model, the ICF looks at the human being as interacting with society. In doing this, the ICF aims to make a coherent view of three different perspectives on health: biological, personal, and social. To attain this goal, a biopsychosocial approach is used (WHO, 2001, 20). Holistic claims are made by the ICF in integrating these two models. Holism, both here and in the ICF, means that: "properties of individual elements in a complex are taken to be determined by relations they bear to other elements" (Heil, 2005, 397). The complexity of the ICF expresses the interaction between the human being and his or her environment. The elements or components of this complexity are the following: (1) health condition, (2) body functions and structures, (3) activity, (4) participation, (5) environmental factors, (6) personal factors and (7) health (WHO, 2001, 18).

To analyze the complexity of the ICF, there is a need to clarify basic ontological presuppositions about what must be acknowledged as existing. According to Edwards (2005, 98–110), there are three main ontologies concerning the nature of the human person, the clarification of which is necessary for understanding the concept of disability. These are monistic materialism (which Edwards calls physicalism), Cartesian substance dualism, and emergentism. It is important to understand some implications of these ontologies.¹ In our analysis of these ontologies, we abstain from answering the basic, but difficult, question concerning the close relationship between the body and mind. We refer instead to Chalmers's (2002) and Velmans's (2009)

views of this relationship. We carry out a *regional ontological analysis*, that is, of “the set of things whose existence is acknowledged by a particular theory or system of thought” (Lowe, 2005, 670). Thus, we conceive of a complex view of reality designated *pluralistic–holistic ontology (PHO)*, described in the theoretical conceptual framework below, and we shall illustrate the complexity of the human being in terms of this ontology. This enables us to attain our aim, which is to scrutinize critically the holistic claims of the ICF by analyzing its components and their interrelationships.

II. A PHO AND A MULTIDIMENSIONAL VIEW OF THE HUMAN BEING

We shall start by describing monistic materialism, Cartesian substance dualism, and emergentism and some of their implications and relevance for understanding disability.

A. Monistic Materialism

According to *monistic materialism*, material reality is regarded as the *only* basic ontological category. Everything that exists is said to be exhaustively described and explained in terms of matter or physicochemical principles. Thus, monistic materialism is ontologically *reductionist*. This type of reductionism can be defined as the claim to be able to exhaustively describe and explain a phenomenon or a process “x” in terms of another phenomenon or process “y”, claiming that x is nothing else than y (Barbosa da Silva, 1982, 72; Ruse, 2005, 793). In this context, x can be any psychological phenomenon such as, mind, cognition, emotion, and behavior, and y is a physicochemical property or process. For example, monistic materialism claims that mind is nothing other than the processes of the human brain. Monistic materialism has strongly influenced medicine since the scientific revolution in medicine in the nineteenth century. The biomedical model of disease is based on this ontology. Thus, physicians sometimes distinguish between “real” and “non-real” pain. In this distinction, pain that cannot be confirmed by objective findings through quantitative measurement of physiological processes is defined as non-real or illusory—which is a reductionist definition. Contrary to this definition, we maintain that the experience of pain is ontologically subjectively real, but entirely dependent on the awareness of it, that is, it exists “only as experienced by some human or animal subject” (Searle, 2000, 44).

Monistic materialism implies that a whole should be understood only as the sum of its parts, that is, there is nothing more to a whole than what can be understood and exhaustively described and explained by studying its parts. This is a *quantitative concept of a whole*. By contrast, a *qualitative concept of a whole* implies that a whole is always more than the sum of its parts. According to this concept, a whole contains some pattern, organization,

qualities, or moments that are not intrinsic properties of its parts, for example, an organism. This concept belongs to the PHO that will be presented in due course.

B. Cartesian Substance Dualism

Cartesian substance dualism states, contrary to monistic materialism, that mind cannot be reduced to matter. In other words, physical reality and mind are *two separate, independent, and opposite* existing realities. This ontological dichotomy between body and mind has, for instance, the following consequence: that a person's pain must be conceived as belonging either to the body or to the mind. This view is problematic, especially with respect to chronic pain, which is a complex phenomenon that cannot be exhaustively described and explained either solely in somatic or in mental terms, but requires both (Thorn and Dixon, 2007).

Edwards (2005, 100–4) maintains that according to Cartesian substance dualism, the single individual is seen as sufficient in him- or herself, being wholly independent of any other human being. Thus, each single human individual, alone or isolated from others, can in principle pursue and succeed in attaining a good life and can develop freedom, identity and characteristic skills, independently of other human beings and of society. This individualistic view is here called *social atomism* (see Taylor, 1985). This view also implies that there are no strong relations that attach human beings to each other or to society.

Cartesian ontological dualism also has epistemological consequences that are relevant here. It implies that “the inner life of consciousness” is like a closed castle. As a result, human beings cannot *directly* experience and *know* the surrounding world. This means that human beings can only experience their own sensory representations of the surrounding world, that is, as a perceived world, *separated* from the external reality. Neither can an individual human being gain objective knowledge of, nor insight into, the experience of other human beings. According to this epistemology, therefore, one cannot meaningfully do research into the subjective experience of other people, of which illness, like pain, is an example. From a holistic theory of reality and of the human being, it is important to know Cartesian ontological dualism well if one wants to avoid its pitfalls: namely, dichotomy of body and mind, social atomism, and epistemological isolation of the human being from the outside world.

C. Emergentism

Emergentism is the view that mental states “occur only under appropriate physical–biological conditions” (Kim, 2005, 240). Mental states are, however, ontologically irreducible to these conditions. Close relationships between mental and bodily phenomena are accepted according to this view. This

view has interesting features (Edwards, 2005, 106–10), but it provides few clues for understanding how the human being should be described holistically, both individually (regarding the mind–body problem) and socially (regarding social interaction).²

D. A Pluralistic–Holistic Ontology

We propose a complex view of reality designated PHO. The term “pluralistic” refers to a multiplicity of realms or spheres of reality. Accordingly, reality cannot be seen as consisting of only one material principle, as in monistic materialism, or of two mutually excluding principles, as in Cartesian substance dualism. We conceive it as constituted by at least three principles underlying three different spheres of reality: physical sphere (matter), biosphere (life), and noosphere. The noosphere is the sphere of mind and spirit (from Gr. *nous*, “mind-and-spirit”) (Cowell, 2001, 131). The term “holistic” in “pluralistic–holistic ontology” refers to a view that these three spheres of reality are closely related to each other and constitute an integrated complex whole in the following way:

The *physical sphere* consists of matter and energy and comprises the whole universe and the physicochemical activity of the Earth. The *biosphere* comprises the part of the universe where life exists, especially the Earth. A living being is defined as an indivisible *unity* that has a body *outstretched in space* and that *endures time* (Fuchs, 2008, 39–40). A living being is dynamic and embodies power. Biology, according to Mayr, envisages biological processes as characterized by

interactions at all levels; among genes of the genotype, between genes and tissues, between cells and other components of the organism and its inanimate environment, and between different organisms. It is precisely this interaction of parts that gives nature as a whole, or ecosystem, or the social group, its most pronounced characteristics. (Mayr, 2007, 34)

Animal life expresses itself in sensations, perceptions, cognitions, emotions, and active movements. These expressions are called *life expressions* (Fuchs, 2008, 263). Life expressions have both a physiological aspect and a psychological one, that is, a *subjective aspect*. The latter is *experienced* only by the animal itself; that is, the experiencing subject has “first hand acquaintance” of its own body and psyche. Thus, life expressions are, to a variable degree, *conscious*.³

For us, the *noosphere*—the third level of reality—refers to “an unfolding of individual and collective ideas, mentalities, aspirations, and experiment” (Samson and Pitt, 1999, 2).⁴ It is the sphere of human cognition and of culture. Animals are conscious, but only human beings seem to be self-conscious and self-reflecting. Thus, the noosphere has not only consciousness but also reason and will. The concept of noosphere covers both human mind and spirit (Ger. *Geist*).

Concerning the relationship between the human consciousness or mind and the body, Bennett and Hacker write that: “Human beings, but not their brains, can be said to be thoughtful or thoughtless . . . [They] can be said to see, hear, smell and taste things; people, not their brains, can be said to make decisions or to be indecisive” (Bennett and Hacker, 2003, 73). These thinkers maintain further that psychological functions apply “to the human being (or animal) as a whole and not to the body and its parts.” We call this principle the *holistic principle of psychological functions*.

For us, an organism is a quantitative whole from one point of view and a qualitative whole from another point of view. Quantitatively, the organism can be divided into body structures and physiological functions according to anatomy and physiology. Qualitatively, psychological functions are moments or qualities of the whole organism. According to our holistic ontology, these two concepts of *a whole* are complementary.

To talk about the relationship between the body, especially the brain, and psychological functions, the concept of *inductive correlations* is useful (ibid., 307). This concept defines the existence of close correlations between body and psychological functions. If there are, for example, injuries in the brain, there are also possible changes in psychological functions. These changing relations are of an inductive kind. This means that bodily damage gives some degree of probability, but not certainty, as to what the psychological effect will be for the individual. In the next section, we shall see some of the consequences of the pluralistic–holistic view of reality for the view of the human being.

E. A Multidimensional View of the Human Being

The human being as a complex phenomenon is related to all three spheres of the PHO. The human being has two basic aspects: an individual aspect and an environmental aspect (fig. 1). The individual aspect integrates the three basic dimensions: physical body (pertaining to the physical sphere), living organism (pertaining to the biosphere), and person (pertaining to the noosphere). The environmental aspect integrates three types of environment: abiotic environment, biotic environment, and human society. The human physical body interacts with the abiotic environment. The human living organism interacts with other organisms in the biotic environment. The environment and the interactions, or relations, of the person are further illustrated in figure 1.

Hacker defines persons as “[S]ocial beings who are members of a moral community” (Hacker, 2007, 310). The concept of person “belongs to the moral sciences—to the study of man as a moral, social, and cultural being” (Hacker, 2007, 311). In other words, the concept of person is closely linked to a variety of social, cultural, ethical, political, and spiritual concepts. We

LEVELS OF REALITY	ASPECTS OF THE HUMAN BEING	
	HUMAN INDIVIDUAL	HUMAN ENVIRONMENTS
A. Noosphere (mind and spirit)	Human person	Human society as a whole. The person in interaction with, or related to, other persons, through social, ethical, spiritual and other cultural values, forming a society
B. Biosphere (life)	Human organism	The biotic environment
C. Physical sphere (matter)	Physical body	The abiotic environment

Fig. 1. A multidimensional view of the human being, with individual and environmental aspects, in relation to three levels of reality.

maintain that the individual and his or her social aspect are tied together by the concept of *social holism*. Taylor explains how the individual becomes a moral agent: “The claim is that living in society is a necessary condition of the development of rationality in some sense of this property, or of becoming a moral agent in the full sense of the term, or of becoming a fully responsible autonomous being” (Taylor, 1985, 191). We defend the view that living in a society is a necessary condition for the optimal development of the individual person. But another necessary condition for the existence of a society is also that the individual persons that constitute the society exercise at least some rationality, moral competence, and autonomy in social interaction with other individuals. Social holism defends the view that there is mutual interaction (or a dialectical relationship) between the individual and the social (or collective) aspects of society. Thus, both collectivistic and individualistic *aspects* of society are necessary for a good and meaningful human life.

An important property of the person is that he or she is an *agent*, that is, an *acting being*. In acting, it is the whole person, not only an organ or a part of an organ that acts. Actions are characterized by *intentions* (Hornsby, 2005, 4) Therefore, actions cannot be explained only by means of causal pathways of the human organism: they must also be explained by intentions underlying actions. Intention is related to other teleological concepts such as goal, will, desire, interest, and motive. Knowing the reasons or motives, for what a person does, makes it possible to understand him or her on the basis of his or her *life story* (or narrative).

There is a two-way *causal direction* (upward and downward) between the three levels of reality (see fig. 1). Upward causation (which occurs, for example, in the individual from the genes to the proteins, from the proteins to the cells, and from the cells to the organs) is the generally accepted principle of causation in biology. Today the concept of downward causation is also gaining acceptance. The meaning of this concept is that an organism’s higher levels of organization have a powerful causal impact on the functions at lower levels: that is, the organism, organs or tissues, as levels of organization, strongly affect, for example, cell signals, or control the proteins necessary for gene expression (Noble, 2008). The products of human

cognition (e.g., technology and social practices) cause changes in the biosphere (Millennium Ecosystem Assessment, 2005).

There are similarities and differences between the standard biopsychosocial conception as presented by, for instance, Engel (1980), and our multidimensional view of the human being. First, both the standard conception and our conception are similar in that they are hierarchical. Wilber (2000, 87–93) has, however, shown that the standard hierarchical conception has the flaw that the surroundings (ecological and social) appear rather far up in the hierarchy. Instead, he holds that the hierarchical structure of reality should be described with the surrounding world at all levels in the hierarchy. This means that the individual human being is seen in interaction with different types of environments. His argument seems to be based on a view that no individual thing can exist apart from environments. We find this argument sound and relevant for our pluralistic–holistic conception. We have therefore drawn a PHO model showing the individual interacting with environments at all levels (fig. 1). In this regard, our conception differs considerably from the standard one.

Second, the standard biopsychosocial conception is based on a systems approach (Engel, 1980). Our conception is compatible with a systems approach with respect to, for example, biology. Our conception is similar to the traditional one in that they both endorse a systems approach. We think, however, that the biosphere and the noosphere also have a lived and experiential perspective that transcends a systems approach. We therefore state that our pluralistic–holistic conception, or multidimensional view, of the human being is *based* on a PHO and, with respect to some dimensions, is *compatible* with a systems approach. Our conception differs from the standard conception so far as their respective main ontological structures are concerned.⁵

III. A CONSTRUCTIVE CRITIQUE OF THE SEVEN COMPONENTS OF THE ICF

Since the human being is considered as interacting with the environment, the ICF defines the overarching concepts of functioning and disability interactionally. *Functioning* is said to connote “the positive aspects of the interaction between an individual (with a health condition) and that individual’s contextual factors (environmental and personal factors)” (WHO, 2001, 212). *Disability* designates the negative aspects of the same interaction (WHO, 2001, 213). Neither functioning nor disability can be understood if one describes only the individual’s health conditions, leaving out environmental and personal factors. (See ICF’s definition of health condition in the next section.) We agree with this view. We shall now, on the basis of the multidimensional view of the human being, first analyze the components of the ICF mentioned in the introduction to this paper. We shall then illustrate how they interact.

A. The Value-Laden Concept of Malady as a Refinement of Health Condition

The ICF defines “health condition” as “an umbrella term for disease (acute or chronic), disorder, injury, or trauma Health conditions are coded using ICD-10” (ibid., 212). An integrated ICF conception needs a value-laden concept of health. We propose to use the term “malady” as a refinement of what is meant by health condition. Accordingly, the concept of malady is defined as a condition of the human being in which he or she is “suffering or is at increased risk of suffering some nontrivial harm (death, pain, disability, or loss of freedom or pleasure)” (Gert, Culver, and Clouser, 2006, 140). The definition contains value-laden terms like “suffering” and “harm.” It is holistic because it does not pin down what kind of harm should be accepted in the definition. The important restriction is that harm is limited “to what is contained within that zone marked by the outer surface of the skin and inward” (ibid., 139). A malady is a type of suffering, or increased risk of suffering a non-trivial harm, which is thought to be caused by, or correlated to, some considerable disturbance of the human organism. With some qualifications, it includes psychiatric illness as the discussion of “impairment” below shows.

Seen from the patient’s viewpoint, some maladies can be exhaustively explained biomedically (*illness with disease*). Some other maladies can be characterized as *illness without disease*, for example, chronic body pain syndromes and some psychiatric illnesses. Others can be characterized as *disease without illness*, as in the case of cancer in its early phase of development.

B. Body Functions and Structures

The ICF emphasizes that “‘body’ refers to the human organism as a whole” (WHO, 2001, 12). Two basic kinds of body systems are described: body functions and body structures (WHO, 2001, 12). We find this distinction to be a reasonable scientific way of characterizing the human organism. It is, however, problematic to assert that the body “includes the brain and its functions, that is the mind. Mental (or psychological) functions are therefore subsumed under body functions” (WHO, 2001, 12). The ICF defines a broad range of psychological functions as “functions of the brain.” General functions such as awareness, temperament and personality, energy and drive, and specific cognitive functions such as attention, memory, emotional, perceptual, and thought functions, are classified as brain functions (WHO, 2001, 48–61). We assert instead that (1) the body is *constituted* by, among other things, the brain and its functions and that (2) some psychological functions are complex and therefore cannot be exhaustively described and explained in biological or physiological terms alone.

The brain and its biological functions are parts of the body according to a quantitative concept of a whole. However, given the complexity of psychological functions, their relation to the brain should be defined according to the qualitative concept of wholeness. Thus, the ICF's concept of psychological function is monistic materialistic and therefore ontologically reductionist from our pluralistic–holistic perspective. In other words, we use the qualitative concept of wholeness to characterize the relation between the body and psychological functions. As previously explained by the holistic principle of psychological functions, it is the whole human organism that has psychological functions. Interestingly, the ICF explains some psychological functions as activities of the person, an explanation that seems to be non-reductionist. In the section of the ICF on activities and participation, “learning and applying knowledge” are dealt with (ibid., 125–8). This domain is about “learning, applying the knowledge that is learned, thinking, solving problems, and making decisions” (ibid., 125). Since this understanding of psychological functions takes the acting person as the point of departure, it is compatible with our pluralistic–holistic thinking. This understanding has consequences for our view of impairment, as we shall now see.

C. Impairment as a Complex and Individualized Phenomenon

The ICF defines impairment as:

a loss or abnormality in body structure or physiological function (including mental functions). Abnormality here is used strictly to refer to a significant variation from established statistical norms (i.e. as a deviation from a population mean within measured standard norms) and should be used only in this sense. (Ibid., 213)

This is a standard biomedical definition. A statistical concept of normality is underlined as basic. We shall now see that this definition of impairment is problematic by analyzing four types of impairments seen in mental health care context.

The first of type of impairment is found in a person who has changed his or her behaviour and whose activities have become limited. There may also be a negative change in personality. Some problems in the structure of the brain have been detected (a disease, for example, cancer or Alzheimer's disease). In this case, there are fairly close correlations between changes in psychological functions and changes in parts of the brain. This type of impairment can be characterized biomedically as proposed by the ICF (above).

The second type of impairment is found in person suffering from schizophrenia and other psychotic disorders. Abnormalities in brain structure, in neurotransmitters, and functional activity have been found among these disorders. It is likely that the structural abnormalities in schizophrenia are gross manifestations of a deviation in neurodevelopment. This type of impairment must be defined as disturbances of the systems of the organism. Research has shown that this type must be understood in *developmental* perspective

from the individual person's life from before birth to puberty (Craighead, Miklowitz, and Craighead, 2008, 402–34). It is difficult to see how this type of impairment can be characterized in a meaningful way according to the ICF definition of the term.

The third type of impairment is found in persons suffering from anxiety and depressive disorders. These disorders are generally triggered by multiple environmental factors: life events, interactions in social environments, abuse, neglect, trauma, etc. Genetics seems to be sometimes important, but the expression of genes is probably influenced by environmental exposures. Generally, a number of neurotransmitter systems are involved. Sometimes it is not only brain functions that are disturbed: the hypothalamic-pituitary-adrenal axis, the autonomic nervous system, and the immune system can also be affected (*ibid.*, 78–328). It seems necessary to define the third type of impairment as widespread disturbances of greater systems of the organism. It is difficult to see how this type of impairment can be understood according to the above definition of the ICF. For this type, it is sometimes better to speak metaphorically about impairment as a person's "broken narrative," in accordance with a hermeneutical–phenomenological approach.

The fourth type of impairment is found in chronic pain syndrome and related illnesses, such as, for example, chronic fatigue syndrome. Ulvestad argues that chronic fatigue syndrome should be understood from a developmental systems perspective. The developmental process is expressed differently in different persons. The point is, however, that "[w]hile there are multiple pathways to build a functional system, there are even more pathways available for the assembly of a malfunctional system" (Ulvestad 2008, 288). Chronic fatigue syndrome should therefore be regarded as a strongly individualized illness. If every patient becomes ill in his or her own way, the person's life history has greater explanatory priority than the present status of the patient. An approach combining biology and phenomenology is promising (Ulvestad, 290–1). Here, too, it seems difficult to understand impairment solely in terms of the ICF definition of the term.

We conclude from this analysis that impairment should be defined as a complex and sometimes highly individualized phenomenon. It seems that it will often be difficult at the present time to describe the impaired processes of the individual human organism in a meaningful way.

D. Activity in the Light of Action Theory

A principle of rehabilitation medicine that we defend is that disabilities should be understood primarily as limitation of a person's activities (Wade, 2006, 186). This is in accordance with our general principle for the description and evaluation of all human functions: that activity and limitation of activity of the person should serve as the point of departure. The concept of normality used here is normative and is given in the answers to the

questions: “What activities are expected from the person in the current context?” and “What does the person expect from him/herself?”

The ICF defines activity as “the execution of a task or action by an individual” (WHO, 2001, 14). The individual is described as an actor. The ICF qualifies activity further by distinguishing between a performance qualifier and a capacity qualifier. The *performance qualifier* “describes what an individual does in his or her current environment,” that is, it describes the actions of a person in the present environment. The *capacity qualifier* indicates “the highest probable level of functioning that a person may reach in a given domain at a given moment.” The ICF correctly emphasizes that reference to a standard environment is necessary for a relevant description of capacity, either in a real test setting or as assumed. (WHO, 2001, 15).

The ICF uses “participation” in a descriptive sense, as in this definition: “Participation is involvement in a life situation.” The term “life area” is used as a synonym of “life situation” (ibid., 14). The ICF lists a broad range of domains of life areas from learning and applying knowledge to engagement in organized social life (ibid., 125–70). Descriptions of involvement in life situations cover activities, participation or both. Nordenfelt replaces activity/participation by the concept of action by asserting that all actions are performed by persons in an environment (Nordenfelt, 2003, 1078). Three requirements, according to him, must be fulfilled in order to speak of action in a right way: (a) a person including his/her living organism, (b) an intention (expressed as, for example, a will or a goal) and (c) an environment. The concept of action—that fulfills these requirements—makes the conceptual framework of the ICF more coherent and practically relevant (see our model of the interactions between the components of the ICF in figure 2 below). And the concepts of ability (or capacity) and opportunity from action theory are helpful for making descriptions of activity and activity limitation dynamic (Nordenfelt, 2006). Nordenfelt defines *ability* as “what a person’s inner resources permit him or her to do. By inner resources, I mean the biochemical, physiological, and psychological conditions inherent in the person” (ibid., 1463). *Opportunity* means “the person’s outer or external possibility. It includes such factors that surround the person: physical as well as psychosocial, cultural as well as legal” (ibid.).

Let us take the analysis of the activity (or action) limitation of a woman with chronic pain syndrome as an example. Her current life and work situation create considerable pain, which limits her occupational activity. If her performance is described only according to the ICF—what she does in her current environment—a static and perhaps negative picture of her situation will be given. If, however, improvements in her abilities relative to opportunities that can be created in the work environment are described, this will be a description of her potentialities.

The concept of *practical possibility for action* can be used to refer to a person’s ability to act in an environment, producing new opportunities

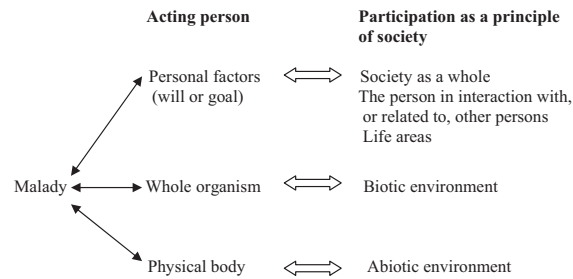


Fig. 2. The interactions between the components of the ICF according to a multidimensional view of the human being. The broad arrows indicate interactions between the individual person and the environments. The thin arrows indicate that malady affects the whole human being and vice versa.

(*ibid.*). To come back to the woman just mentioned: more education, training, practical adjustments, organizational change, or long-term individual follow-up could combine to make a better fit between her and her current work environment.

E. Environmental Factors

“Environmental factors” as an ICF component “make up the physical, social, and attitudinal environment in which people live and conduct their lives” (WHO, 2001, 10). These factors are divided into (1) the immediate environment of the individual and (2) the structural level of the community or society (WHO, 2001, 16–7). The ICF does not explicitly use the concept of social holism. But implicitly it seems to have this concept of society as the background to its description of “formal and informal social structures, services and overarching approaches, or systems in the community or society that have an impact on individuals” (WHO, 2001, 17). This implies interaction between the individual and the social environment.

The ICF has three terms to denote circumstances that people live in: life situation, life area, and environmental factor. Various kinds of environments or circumstances can be combined in a broad concept of environment, which can be specified according to the descriptive need of the moment. It is important to note that environmental factors sometimes function as facilitators of functioning; at other times, they are barriers or hindrances (*ibid.*, 11).

F. Personal Factors

Action is, as we have seen, characterized by teleological concepts such as will, goal, desire, and intention. However, such concepts are sparingly used in the ICF. The term “goal” can be found in the word “goal-directed behaviors” when higher-level cognitive functions are described (*ibid.*, 57). Will is not mentioned even as a personal factor (*ibid.*, 17). Many other personal factors,

such as gender, life style, coping styles, and so on, are mentioned and are considered important (ibid.). As is now widely recognized, goal setting is the essence of rehabilitation. Goals should therefore be seen as central in the ICF (Schuntermann, 2009, 48–50).

The ICF defines “personal factor” as a “contextual factor” (WHO, 2001, 17). We do not think this is a correct characterization from a holistic point of view. A personal factor is a factor of the individual acting person. However, the ICF does contain one definition of disability that relates personal factor directly to the individual. It is this: “Disability is characterized as the outcome or result of a complex relationship between the individual’s health condition and personal factors and of the external factors that represent the circumstances in which the individual lives” (WHO, 2001, 17). Here, “individual,” “health factor,” and personal factors are mentioned in a complex relationship with the circumstances or environment. If personal factors include teleological factors, we have a view that is compatible with the pluralistic–holistic thinking as described above.

G. Participation as a Normative, Ethical, and Political Concept

The term participation also has important ethical and political senses in the ICF, which are clearly shown in this text:

[I]t is the collective responsibility of society at large to make the environmental modifications necessary for full participation of people with disabilities in all areas of social life. The issue is therefore an attitudinal or ideological one requiring social change, which at the political level becomes a question of human rights. (WHO, 2001, 20)

If disability is seen as caused at least partly by social conditions, then society has a collective responsibility to provide for full participation of people with disabilities in all areas of social life. Right to full participation of people with disabilities is a human rights issue. We think that participation should be defined primarily as a normative concept in the ICF.

The ICF should also open up for a discussion of different normative meanings of participation restriction. The ICF states that the presence of such restriction “is determined by comparing an individual’s participation to that which is expected of an individual without disability in that culture or society” (ibid., 213). Not every disabled person, however, find it reasonable to compare his or her participation with that of “normal” people. Disabled people want to find paths to participate in their own individual way.

H. The Concept of Health

The ICF does not give an explicit definition of health. Schuntermann (2009, 19) characterizes its implicit concept of health as a functional one. The five components of this functional concept are *body function and structures*,

activity, participation, environmental factors, and personal factors. We can now reflect on the concept of health according to our conceptual analysis. We still use a functional concept of health, but it has been made more precise in two senses: (a) it is clearly value-laden and (b) will, or goal, are fundamental among the personal factors. In company with the health theorists Fulford, Nordenfelt, and Seedhouse, we regard *ability* as a fundamental concept in a definition of health. “[T]he dimension ability/disability is the core dimension determining whether health or ill-health is the case. A healthy person has the ability to do what he or she needs to do, and the unhealthy person is prevented from one or more of these actions” (Nordenfelt, 2006, 1462). Hence, a person can be healthy, even if he or she has a disability as described from a biomedical viewpoint, in so far as he or she is able to do what he or she needs to do.

IV. A REVISION OF THE ICF MODEL: THE ACTING PERSON INTERACTING WITH THE ENVIRONMENT

The current model of the interactions between the components of ICF depicts the components “body functions and structures,” “activities,” and “participation” as on the same level. Personal factors and environmental factors are regarded as contextual factors. In this model, participation is seen as almost diametrically opposite to environmental factors, and personal factors are separated from activities (WHO, 2001, 18).

In order to have a pluralistic–holistic model of the interactions between the components of ICF, the interactions should partly be based on multidimensional view of the human being (fig. 1) and partly based on the principle that the acting person in relation to normative and descriptive environmental factors should be drawn close to each other on the uppermost level of a hierarchy of human dimensions (see fig. 2). A basic environmental factor is participation as *a normative principle of society*. Basic *descriptive environmental factors* are society as a whole, the person in interaction with, or related to, other persons, and also life areas. Personal factors are seen as closely related to the person, and the concept also covers will and goal.

The intermediate level (see fig. 2) depicts the human being as a whole organism interacting with the biotic environment. The lowest level depicts the human being as a physical body in interaction with the abiotic environment.

V. CONCLUDING REMARKS

The holistic properties of the ICF have been analyzed on the basis of a PHO and in terms of a philosophical conceptual analysis. The ICF’s seven basic components have been critically analyzed. These components are: (1) health condition, (2) body functions and structures, (3) activity, (4) participation, (5) environmental factors, (6) personal factors, and (7) health. The ICF’s

concept of health condition has been refined in terms of the value-laden concept of malady. The human organism is seen as both a quantitative and qualitative whole. Given the complexity of psychological functions, we argue that their relation to the human being should be defined according to the qualitative concept of wholeness. Impairment has been defined as a complex and sometimes highly individualized phenomenon. Our general analytic principle is that activity and limitation of activity of the person should serve as the point of departure for descriptions and evaluations of all human functions. Human activity is defined as acts in accordance with action theory. There are three necessary requirements for action: (a) a person including his/her organism, (b) an intention (expressed as, e.g., a goal), and (c) an environment. These concepts are used to make the conceptual structure of the ICF more coherent, fruitful, and more easily applicable, in accordance with our constructive critique of it. Participation is found to be primarily a normative, ethical, and political concept. Various kinds of environments can be combined into one broad concept of environment, which can be specified according to the descriptive need of the moment. Personal factors should include intentional concepts such as goal or will. The concept of health as functional is made more precise in two closely related ways: (1) it is value-laden and (2) will and goal are fundamental among personal factors. A multidimensional and holistic model of the components of the ICF is based on the principle that the acting person, in relation to normative and descriptive environmental factors, should draw on the uppermost level of a hierarchy comprising the whole organism and physical body in its biotic and abiotic environments.

NOTES

1. A fourth main ontology concerning the nature of the person is Thomistic ontology, which is based on the concept of the soul and its relation to the body. The soul is defined as “a substantial unified reality that informs its body” (Moreland and Rae, 2000, 202). There is an interesting debate among scholars as to whether the sophisticated thought of Thomas Aquinas should be understood as a (Thomistic) substance dualism or a monism—a debate we cannot go into here. However, the Thomistic view of the human being is important and interesting. One reviewer of this article wrote that on a Thomistic understanding of substance dualism, “the mind is a faculty of the soul, which infuses the entire body; ‘body’ and ‘soul’ (hence, ‘mind’ also) are, in the normal (embodied) state, a deep unity. Thus, a person’s pain can be conceived as belonging to both the body and to the mind.” If this interpretation is correct, it conveys the same understanding of human pain as our holistic view of person based in our holistic ontology. See also Moreland and Rae, 2000, 199–228.

2. Emergentism not being reductionist and representing a non-dualistic view of reality is compatible with our holistic view of reality. The latter is, however, more comprehensive.

3. Consciousness eludes easy definition and is basically described as follows: “A mental state is conscious when there is something it is like to be in that state. Conscious states include states of perceptual experience, bodily sensations, mental imagery, emotional experience, occurring thought, and more. There is something it is like to see a vivid green, to feel a sharp pain” (Chalmers, 2002, 248).

4. Pierre Teilhard de Chardin used the concept of the noosphere first in 1925 (Cowell, 2001, 131). He thought of this sphere of mind-and-spirit as an important “evolutionary leap forward” (ibid.). At least four different senses of the term noosphere are in present use (Samson and Pitt, 1999, 1–9).

5. A reasonable epistemological consequence of our pluralistic–holistic conception of the human being is the following: since human beings must be understood multidimensionally and holistically, the methods by which to obtain knowledge of them must be pluralistic and adequate to their study. This is why we recommend a comprehensive scientific approach in combination with a hermeneutical–phenomenological approach, that is, a specifically humanistic one. The pluralistic–holistic conception of the human being permits us to see these approaches as complementary. Or, in methodological terms, quantitative and qualitative methods are *both necessary*, and together they are *sufficient* for the study of the human being, individually and socially.

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