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Extending the capability paradigm to address the complexity of disability

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EXTENDING THE CAPABILITY PARADIGM
TO ADDRESS THE COMPLEXITY OF DISABILITY[1]

Jean-Luc Dubois[2] and Jean-François Trani[3]

Abstract

Amartya Sen looks at people's well-being in terms of functioning and freedom, rather than in terms of the amount of goods or services consumed. The capability approach developed by Sen deals with what people are able to achieve by using these commodities. Concerning disability, he wrote: "We must take note that a disabled person may not be able to do the many things that an able-bodied individual can, with the same bundle of commodities" (Sen, 1985 p.7). The capability approach makes it possible to analyse the economic situation of people with disabilities in a different way. What becomes important is their functioning, i.e. what they are able to achieve within a given context.

In fact, the capability set includes not only what a person is effectively able to achieve, but also the potential functionings that he/she can choose. This expresses the degree of freedom that a person with disability benefits from in a given environment. The challenge is therefore to reduce the constraints that the environment adds to a person's impairment in order to expand their capability set, and to allow them to live a life which they value.

This paper reviews the paradigms that address disability and the ways of assessing a person's capability set within this framework. Achieved functionings are easily measured through cross-sectional surveys, using counterfactual analysis to compare the situations of disabled and non-disabled people. This was done in 2005 in Afghanistan when a national disability survey was carried out on a random sample of households. Measuring detailed capabilities, especially their freedom dimension, is quite complex and requires identifying people's potential choices in an ever-changing environment. This implies a need to extend the philosophical framework, and to adopt appropriate statistical methodologies.

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Résumé

Amartya Sen aborde la notion de bien-être en se préoccupant des fonctionnements, réalisations et libertés des personnes, plutôt que de la quantité de biens et services qu'elles consomment. L'approche par les capabilités qu'il propose met plutôt l'accent sur ce qu'il est possible de réaliser à travers l'utilisation de ces biens. Concernant le handicap, A. Sen écrit : « il faut reconnaître qu'une personne handicapée peut ne pas arriver à faire toutes les choses qu'une personne non-handicapée réalise, même si elle dispose d'un panier de biens identique » (Sen, 1985 p.7). L'approche par les capabilités permet d'aborder l'analyse économique du handicap de manière différente. Ce qui importe, c'est le niveau de fonctionnement que des personnes handicapées sont capables d'accomplir dans un contexte donné.

Or, l'ensemble des capabilités d'une personne handicapée recouvre non seulement ce qu'elle peut effectivement accomplir, mais aussi les fonctionnements potentiels qu'elle pourrait choisir de faire. Ces derniers expriment son niveau de liberté dans un contexte donné. L'enjeu consiste alors à réduire les contraintes que l'environnement rajoute à son handicap de façon à accroître l'ensemble de ses capabilités et lui permettre ainsi de vivre la vie qu'elle souhaite.

L'article présente différentes visions du handicap et la façon dont on peut évaluer l'ensemble des capabilités. On mesure, en général, les fonctionnements effectifs par des enquêtes en coupe instantanée qui permettent une analyse comparée de la situation des handicapés et des non-handicapés. Ce fut le cas pour l'enquête nationale sur le handicap qui a été réalisé en 2005 en Afghanistan auprès d'un échantillon aléatoire de ménages. Estimer les capabilités, dans leur dimension de libertés, est bien plus complexe car elle demande d'identifier les choix potentiels des personnes dans un environnement qui se trouve être en mutation. Ceci implique d'élargir le cadre philosophique de référence et d'utiliser des méthodologies statistiques particulières.

Mots-clés: Modèle de handicap, Capabilité, Capabilité collective, Phénoménologie, Mesure, Pays en développement.

Introduction

The total number of people with disabilities worldwide, known as the 'prevalence of disability', is not accurately known. This was recognised as a major issue in the 2007 UN Convention on Rights of Persons with Disabilities. Article 31 of this convention specifically stipulates that the collection of information and, particularly, the search for statistical data required for the design and implementation of appropriate policies, is the responsibility of State parties. According to the principles of the convention, guidelines for the design of methodological tools, adjusted to the environment of different countries, need to be produced in order to estimate the global incidence of disability. However, designing this data collection and the appropriate analysis instruments remains a complex endeavour in view of the various conceptual paradigms that define disability. Looking for a single framework that can be used by all researchers and practitioners, and translating it into measurement instruments that fit the various cultural and social contexts, remains a major challenge (Baylies, 2002; Groce, 2006).

Various theories and models compete for the definition of disability, ranging from an extremely 'medical' view to a very 'social' one (Mont, 2007), and choosing amongst these alternative paradigms makes the assessment of disability a perilous exercise (Altman, 2001; Me and Mbogoni, 2006). Fortunately, over the last decade, a major step towards reconciling these views has been achieved by focussing on the disabling environment. By considering the interaction between individual situations and collective resources and limitations, the issue of individual impairment was extended into that of social disability. This led to the International Classification of Functioning, Disability and Health (ICF), which is currently promoted by the World Health Organization (WHO, 2001). The measurement of disability has been improved and standardized through specific surveys based on the ICF definition of disability (Loeb et al., 2008; Trani and Bakhshi, 2008; Van Leit, 2008).

The focus has recently shifted towards paying more attention to the interaction between the individual and the environment in which he/she lives, i.e. their community and the society as a whole. In this context, the capability approach, conceived by Amartya Sen and Martha Nussbaum, provides new insights. These methods were successfully tested in Afghanistan in a national disability survey (Trani and Bakhshi, 2008). However, field operations reveal the need for a better understanding of how disability affects the quality of life and aspirations of people through their social interrelations, particularly in developing countries. Knowing more about this would help us to design appropriate policies in order to improve the capability of people with disabilities.

This paper, grounded in the Afghanistan field experience, begins by reviewing the various paradigms that address disability. Suggestions are made of how to go beyond these paradigms, and extend the current conceptual framework that is based on the capability approach. The phenomenological perception of social interactions between disabled and non-disabled people makes it possible to extend people's capability sets and their agency. This implies improving the current investigation instruments, and identifying appropriate analytical methods.

An Analytical Framework to Understand Disability

Before carrying out a disability assessment, a conceptual framework is required to guide the field and analytical operations. It is based on the choice of a precise definition of disability which is adapted to a given socio-cultural context. This must provide a definition of disability and of the disability subpopulation that is consistent with the objectives of the assessment. By defining the various impairments, the difficulties in functioning, the features of the social environment, the interaction between people with disabilities and their families, communities and society at large, this framework has implications for how the prevalence of disability will be estimated. Data collection tools on disability are designed accordingly to provide the information required for the implementation of relevant projects, programmes and policy measures.

Over the past four decades, several paradigms have been developed. In this paper, the word paradigm is used to define a coherent and comprehensive conceptual framework of disability combining a theoretical and analytical explanation and possible measurement and operationalisation. Each paradigm generates an operational model of disability. As a first step, we review the original medical and social models that have led to the ICF model, which is currently recommended by WHO, and commonly used for the design of disability surveys.

The Initial Paradigms: the Medical, Social and ICF Models

The first paradigm is the medical paradigm, which has led to the 'individual' or 'medical model'.

The Medical Model

In the medical model, disability is considered to be a physical condition that is intrinsic to the individual, and the result of deviation from a physical norm. It compares the quality of life and ability to participate in society of the person with disability to that of 'normal functioning' (Pfeiffer, 2001; Amundson, 2000; Marks, 1999). According to this model, power lies in the hands of professionals who can provide rehabilitation.

The measurement of prevalence is based on the number of individuals who are assigned to the various categories of impairment, which are viewed as limitations of the functions and structures of the body. People with disabilities fall neatly into a few categories with clear boundaries such as the deaf, blind, paraplegic, mentally ill, etc. Disability is therefore only experienced by a small number of individuals, and the phenomenon is not considered as part of the general human experience.

Consequently, very low prevalence rates are usually found in surveys when the questions asked focus solely on the health aspects. Not taking into consideration the environment (which includes the availability of equipment and medical services, the cultural norms and beliefs, and economic development among other factors) that impacts on the prevalence rate. This is a clear drawback because the environment usually has a major impact on each person's specific health condition, and more generally on the well-being of any individual.

Moreover, the main problem with the medical model is its negative approach, as it sees disability as deviance from what is accepted to be the norm. This model has consequences for the way data is collected by focusing solely on the individual and on his/her impairment. Questions asked via a specific "disability" survey might be perceived by the respondents as stigmatising, leading to a reluctance to answer honestly, and thus to under-reporting, which in turn will again tend to reduce the prevalence rate.

The Social Model

The 'social model' is quite different from the medical model (Oliver, 1983). It does not focus on a specific health condition, and rejects the idea of impairment as a departure from an average level of human functioning, which is considered to be "normal". Instead, it considers the person with impairment as being disabled due to a given social and economic environment. The focus is no longer put on the physical or cognitive limitations of persons with disabilities but on the failure of the environment to adjust to their needs as well as the negative social attitudes they face in everyday life (Hahn, 1986).
This view has been put forward by academics and organizations working with persons with disabilities. The model looks at the barriers that exist within a social context which prevent a person with disabilities from achieving the same level of functioning as a non-disabled person. From this perspective, society itself needs to be redesigned in order to improve the way it caters for the needs of the people with disabilities (Oliver, 1996). The focus has shifted from a limited biomedical perspective to a wider perspective, incorporating rights, justice, empowerment and choice. Specific attention is given to oppression of persons with disabilities and consequently to discrimination endured by persons with disabilities (Barton, 1993).

Consequently, mainstreaming disability is a progressive and sustainable way of redesigning society in order to be more inclusive of people with disabilities. Advocates of this model consider that physical limitations become a disability, because society fails to accommodate differences. It is therefore society itself that is not structured properly. The social model is therefore an attempt to empower disabled people by removing barriers and increasing social inclusion. A strict application of this model would exclude from the disability perimeter people with impairments who are appropriately equipped, and therefore have full access to and equal participation in society.

This has implications for how the prevalence of disability is measured and investigated. Such an investigation combines questions about physical limitations or differences with other questions intended to identify the barriers in the social environment. In the case of Australia, for instance, when short sightedness has been included in the definition of disability, the disability rate increased from 10% to 19.3%. Yet, there is no specific problem of inclusion of people with short sightedness in Australia so one might consider that people with short sightedness are not in a disabling situation.

In both the medical and social models, disability is related to the existence of an impairment understood as a health condition that differs from a benchmark health

status perceived as 'normal'. What distinguishes the two paradigms is that the social model identifies disability as a lack of adaptation of the social environment (and in the worst cases, as oppression or exclusion), whereas the medical model identifies it as a restriction of activity caused by impairment. A combination of both approaches might help to identify barriers to inclusion as well as to alleviate the physical, biological, sensory, or psychological impairment by providing appropriate health facilities and policies. Neither of the two models have specifically explored the socio-political context and its responsibility in the exclusion of persons with disabilities, which occurs mainly through inaccessibility and negative attitudes.

The ICF Model

This third paradigm views health as a continuum, and considers that every individual experiences some deficiency in some aspect of his/her functioning. Disability simply becomes a part of the general human experience. Based on such a view, the World Health Organization (WHO) established an International Classification of Functioning, Disability and Health, commonly known as ICF (WHO, 2001).

The 'ICF model' therefore considers disability to be the result of a combination of individual, institutional and societal factors that define the environment surrounding a person with impairment. Disability is examined through these various dimensions, and the ICF includes domains of activity and levels of participation that express what the body, the individual person, and the person-in-society can do. "In the ICF, the term functioning refers to all the body functions, activities and participation, while disability is similarly an umbrella term for impairments, activity limitations and participation restrictions" (WHO, 2001 p.3). This definition encompasses two major elements: body functions and structures on the one hand; activity and participation on the other. It therefore envisages the assessment of two kinds of factor. Environmental factors, on the one hand, include the physical environment, the social environment and the impact of social attitudes, while personal factors, on the other hand, relate to the personality and characteristic attributes of the individual (Mitra, 2006).

Such a view is based on the assumption that the key measure of the outcome is individual functioning, regardless of what determines this. Thus, the ICF takes a different approach to measurement by referring to a disability scale for data collection. This reference disability scale is based on the determination of a set of domain codes for the various activities a person should be able to do. Appropriate qualifiers are used to identify the presence of impairment, and record the severity of the functioning problem. An assessment scale of five levels of difficulty is commonly used (e.g., no impairment, mild, moderate, severe, and complete impairment). However, to take full advantage of this coding process, a large amount of detailed information has to be collected about the various activities, the person's capacity to participate, and the use of personal assistance and assistive technology.

The World Health Organization has developed a specific survey instrument based on the ICF. It is referred to as the World Health Organization Disability Assessment Schedule II (WHODAS II), and it covers all types of disabilities (physical, mental, sensory), for various countries, languages and contexts, making it suitable for cross-cultural use. WHODAS II includes four alternative versions covering different ranges

of impairment. The 89-item version is the most complex one, but simpler versions exist with 36 items, 12 items and 6 items respectively. The most frequently used version (i.e. the 36-item version) is composed of various modules, each module consisting of a series of questions about specific activities in different domains.

The Washington Group on Disability Statistics (WG), which was set up in 2001, also developed a set of questions based on the ICF to be used in national censuses and sample-based surveys (Madans, 2006). Its purpose was to provide guidelines which would facilitate the production of comparable international and cross-cultural disability measures that could be used for designing equal opportunity policies. A set of questions has been agreed upon and tested in different settings. Four core functional domains (seeing, hearing, walking, and cognition), and two additional domains (self care and communication) were required by the member countries participating in the group.

In fact none of the various sets of questions, recommended by international organizations, actually succeeds in covering the full range of information that is required to assess the qualifiers suggested by the ICF correctly. The complexity of disability as a social phenomenon leads to different ways of using the concepts and, therefore, to a large range of possible questions (Altman, 2001). Furthermore, some authors question the feasibility of using identical instruments in diverse cultural contexts, as questions might not be understood in similar ways (Baylies, 2002). Finally, we consider that the ICF is limited in its scope and use, as it is first and foremost a classification system: its primary purpose is classification. Therefore, although it is a useful tool for measuring prevalence, it has a limited utility in terms of policy design, programme definition, development practice, promotion of participation and identification of barriers to inclusion.

Confronted by these shortcomings, we think that the understanding of the complexity of disability requires a wider and more comprehensive analytical view. It cannot be restricted to measuring the prevalence of disability. In that way, the capability approach provides just such new insights through a framework that is able to encompass all the previous models.

The Capability Approach and Beyond

The capability approach was developed in generic terms by Nobel prize-winning economist Amartya Sen, and complemented by philosopher Martha Nussbaum. It focuses on the "capability set that a person has, that is, the substantive freedoms he or she enjoys to lead the kind of life he or she has reason to value" (Sen, 1999 p.87). The capability set expresses both what a person is able to do and to be effectively, through 'functionings' and achievements, such as travelling, feeding him/herself correctly, accessing school and health centres, and what (s)he may also be potentially able to do in other circumstances if opportunities are available to him/her. Moreover, the latter also describes the freedom of alternative choices that he/she may have to lead the type of life that he/she wishes to live.

The Capability Paradigm

Such a view provides new insights into how to understand disability, since it proposes to look not only at what a person actually does, i.e. his/her functionings, but also at the range of possibilities from which he/she may choose these specific functionings. It therefore offers another conceptual framework to study disability, one that goes beyond the previous medical, social and ICF-related paradigms (Burchardt, 2004; Mitra, 2003; Terzi, 2005; Trani and Bakhshi, 2008). Moreover, it shifts the focus from the specific aspects of a disabling situation and its consequences in terms of functionings, to the actual choices and possible choices that a person could have.

Disability is thus defined as a lack of capability, due to restriction in the range of opportunities available in a given context. The capability approach provides an analysis of the socio-political context in which the person with disabilities lives, and explores the mechanisms through which oppression and exclusion ensue. Enhancing people's capability thus becomes directly related to reducing the consequences of disability by increasing opportunities for people with disabilities, and allowing them to choose among various opportunity sets. The full range of the disability experience can then be covered, by shifting the focus away from the restricted view of identifying types of impairment. The fact that each individual is asked about the level of difficulty he/she experiences in functioning in the various dimensions of well-being makes it easier to assess the disabling situation in a comprehensive manner. On this basis, appropriate policies intended to enhance people's capability can be designed by referring to people's needs, values and choices. These policies will contribute to restoring equal opportunities and choice for those who experience capability deprivation - the precise definition of poverty according to Sen (Sen, 1999 pp. 87-110). Therefore, poverty understood as deprivation of primary goods or lack of income constitutes too narrow a perspective to evaluate well-being, which is the ultimate objective of development. This places all actions and policies related to disability within the wider spectrum of human development.

However, specific information is required to assess and measure disability within this paradigm. Data are related to individuals' potentialities, the possibilities that they can "be" what they wish to be, their aspirations and what they value. It also entails gathering information about vulnerability, which expresses the risk of suffering a reduction of the capability set, measured by the probability of falling to a lower state of well-being. Finally, it requires information about the opportunities offered by the environment.

Martha Nussbaum (2000) goes a step further by detailing ten central capabilities that constitute an individual's capability set. These capabilities are required to lead a fulfilled life. This allows her to address many issues including severe mental illness and intellectual disability (Nussbaum, 2006). These ten 'central human capabilities' include preservation of life, good health, body integrity, sense, imagination and thought, emotion, practical reasoning, affiliation, respect for other species, playing, and control over one's own environment. Some of these are based on social interactions, for example the capability of affiliation, which leads people to pursue a common objective, such as the advancement of the well-being of all individuals, including the most vulnerable. Disability results from the lack of effective achievement of some of these central capabilities as a result of activity limitations or functioning restrictions that are not compensated for by social adaptation. Moreover, due to its 'multiple realizibility' as expressed by M. Nussbaum (2000), this list of

central capabilities can be adjusted to the needs of any local context by detailing or increasing the number of items. This allows us to address capability limitations at the same time, which are due to impairment, as well as capability deprivation, which expresses the person's level of poverty or lack of well-being.

The promotion of such central capabilities can constitute an objective for policy makers in order to improve the well-being of disabled people. From this perspective, the role of researchers will be to identify the extent to which individuals with disabilities value and benefit from these central capabilities in a given context.

However, even though the capability approach provides new insights, some weaknesses still remain. They are related, firstly, to the issue of the collective action (Olson, 1965) that may be required to enhance people's capabilities through an appropriate agency, and secondly, to the issue of responsibility, which is related to improving freedom. This implies a need to go beyond the current views of Sen and Nussbaum, and address the set of relationships, effective or perceived, that links people with disabilities, and relates people with disabilities to non-disabled people.

Assessing Collective Capabilities

In many cultural settings, each individual is embedded within a network of relationships with others that allows them to act collectively and support each other. As a result, an individual set of capabilities is not only determined through an individual agency, but can result from interactions with other people. The first issue is to explain how a collective capability can emerge from the combination of the capabilities of several individuals. This implies providing a precise description of how a collective capability set can be constructed by pooling various individual capability sets. This aggregative aspect has not yet been addressed properly, since the aggregation of capabilities follows quite a complex mechanism. In fact, in addition to the individual capabilities that each member of a group possess, there are also 'social capabilities' that result from the interaction between the members of this group (Stewart, 2005). Social capabilities are new capabilities that each individual acquires by interacting with others. The affiliation capability, which according to Nussbaum (2006) includes engaging in various forms of action with others and having the social basis for self-respect and the absence of humiliation, provides the means for exploring this issue of social capabilities. Social capabilities are also generated within specific social structures, such as self-help groups, associations, cooperatives, trade unions, etc. (Ibrahim, 2006). They include, but are not limited to 'external capabilities', defined by the possibility for an individual to achieve functionings by accessing the capabilities of others through relationships (Foster and Handy, 2008: 11). Social capabilities go beyond the mere process of public reasoning to identify relevant capabilities for a group.

The collective capability of a group thus results from the combination of purely individual and social capabilities. However, this situation may lead either to a lower level of capability, if the members interact in a conflicting way, or to a higher level than the mere sum of the individual capabilities, if people associate in a constructive way. Some experimental work has been done recently in an attempt to understand how these mechanisms of aggregation work, but approaches differ according to the type of activity (Anand, 2007; Sandler and Arce, 2007).

However, this way of thinking provides new insights into addressing disability research. In a given context where social interaction is high, it might be more relevant to reinforce the collective capability of a community in order to address disability, rather than just improving the individual agency of persons with disabilities. This was the case in Afghanistan, where it was found, for instance, that funding programmes to make public buildings accessible (i.e. by providing ramps) for people with mobility restrictions who already received individual assistance from other members of the community, was not necessarily the best use of limited resources in a country where access to health services, schools and even water supply is limited. Collective action can provide capabilities for the group that each member would not have been able to achieve alone (Ibrahim, 2008). For example, people with disabilities can organise themselves collectively in DPOs (disabled people's organisation) to lobby policy-makers to increase collective capabilities. There is an ongoing debate around to what extent the concept of collective capabilities can contribute to understanding social change, and how marginalized groups, such as disabled people in many developing countries, can make their voice heard by means of collective organisation (Dubois et others, 2008).

Considering Responsibility

The second weakness of the capability approach is linked to the issue of responsibility towards vulnerable groups, and to recognising their specific way of interacting within society. Jonas considers that responsibility defines the human being: "the quality of humanity is his capacity to responsibility" (Jonas, 1979 p. 92). According to Jonas, responsibility can be considered in two different ways by distinguishing between the prospective dimension (*ex ante*, i.e. being 'responsible for' others) and the retroactive dimension (*ex post*, i.e. being 'responsible to' others).

In the retroactive dimension, which is also called 'social responsibility', an individual is responsible for the consequences of his/her own actions (in the *ex-post* sense). These actions are undertaken thanks to the individual's capacity to decide and act freely. It is, for instance, a commonly accepted moral imperative that you have a duty to stop if the car you are driving hits someone.

In the prospective dimension of responsibility, it is the feeling of being responsible that counts. This exists even before one exercises one's freedom to act (i.e. it is an *ex-ante* situation). This prospective responsibility becomes very acute when it deals with a situation in which any action might lead to serious consequences. This precise responsibility is referred to by Jonas (1979) as a particular type of 'parental responsibility' - the responsibility that parents usually feel towards their children. Following the same path, Levinas (1985) generalises it as a 'personal responsibility' towards all those who are vulnerable and should be given priority. However, such personal responsibility relies on individual free will. The individual has to be aware of a particular risk to others that results from his/her action. Being aware of this risk makes him/her attribute to him/herself an *ex-ante* responsibility, and therefore to agree to reduce his/her own freedom accordingly.

The disability issue can also be addressed through such a framework for action, since it refers to human obligations towards others who have a right to recognition of their own dignity. It raises a feeling of *ex-ante* responsibility, which may imply reducing one's own freedom. For Ricoeur (2005), this attitude defines, in substance, what a person is, i.e. a capable human being, whose skills include the ability to attribute to him/herself a responsibility and behave accordingly.

This distinction between the two main dimensions of responsibility, i.e. social *ex-post* and personal *ex-ante*, is not clearly perceived by the capability approach as currently conceived. For Sen, responsibility is related to freedom. "responsibility requires freedom" […] "expanding people's freedom can therefore be seen as an argument for individual responsibility" […] "freedom is both necessary and sufficient for responsibility" (Sen, 1999 p. 284). Therefore, the question of being responsible for those deemed to be the most vulnerable is not clearly addressed. It requires one to consider voluntarily reducing one's own freedom in order to satisfy one's obligation towards others.

To address these two major issues of collective capabilities and responsibility, which are central to disability studies, we suggest switching from the framework of analytical philosophy, which is currently used, to the phenomenological framework. Analytical philosophy, which was initiated by B. Russell (1919) and L. Wittgenstein (1921) and the Vienna Circle, provides a very helpful framework for examining the links between independent causes, factors and outcomes in a functional way. This is useful to address the disability constituency, and the living conditions of people with disabilities.

Analytical philosophy is the implicit philosophical reference for both A. Sen and M. Nussbaum. It is the paradigm that upholds their arguments and demonstrations, mainly adopting a teleological and 'consequentialist' view. This is particularly true for Sen, whose reasoning as an economist is strongly influenced by the axioms of the social choice theory. It is within this analytical framework that he refers to Rawls' theory of justice (1971) bringing his own view of the 'leximin' (the lexicographic 'maximin'), a multi-criteria ranking of people starting from the poorest, defined as the relevant criterion for social justice towards the poorest and most vulnerable (Sen, 1973).

Analytical philosophy tends to exclude some major issues, such as the perceived relationships between disabled and non-disabled people, social representations, the symbolic views of disability, generating stigma, disabled people's intentions and aspirations. In contrast, the phenomenological approach provides a comprehensive analysis of society as a whole in which various actors interact in a systemic view with proper feelings and aspirations. Adopting such a descriptive approach could complement the current analytical and functional view by providing new areas for analysis.

A. Sen (1982), by using the 'leximin' as a decision rule aims at ensuring an 'equality of capability' in its generic meaning, therefore addressing the situations of the most deprived (and limited) people as a first step. He insists on the need for a large information base in order to conduct the process correctly: the larger the information base, the better the decision process. In that way, phenomenology contributes to

enlarging the information base through its descriptive approach of essential phenomena.

Therefore, a reference to the phenomenological approach could be very helpful for addressing the issue of disability, in which not only the mechanical causes of factors are important, but also people's intentions, reflected by their various psychological interactive links. Phenomenology addresses the various 'phenomena of life' in their full complexity by avoiding dividing them into functional items in order to analyse and understand them (Schutz, 1967; Ferguson, 2006). This philosophical school of thought originated in continental Europe, with Husserl (1931) and Heidegger (1927), and continues now in the work of recent philosophers, such as Levinas (1985) and Ricoeur (1992).

This approach considers that in the reality of the human life, individuals are embedded in a network of social relationships, with interactive obligations and reciprocal intentions. This implies the need to deal with all the elements that constitute and shape this life, such as people's social interactions, the balance of rights and obligations amongst them, the influence of the variety of cultural backgrounds, and the intentionality of actions. Such a background makes it possible to tackle complex issues, such as the linkages between individual and collective capabilities, and also those between freedom and responsibility, which are not correctly addressed by the current capability paradigm. These are all phenomena that need to be observed and analysed, through their various dimensions and components within the inter-relational nexus in order to elucidate the situation of people with disabilities, and how to improve their quality of life in a given context.

Naturally, this approach increases the information space by adding new variables, such as responsibility, social capability, collective agency, which makes the analysis quite complex, especially when it is done with an economic perspective. It increases the number of variables that have to be taken into account in the analysis of disability issues. On the other hand, it also provides new analytical grounds for tackling the complexity of the disability issue by integrating the respect for human dignity and its natural diversity. The usual analytical and functional methodologies can still be used within such a comprehensive framework.

In fact, analytical philosophy and phenomenology should be considered to be two complementary philosophical approaches, both of which are needed for the analysis of disability as a complex phenomenon in a given society. Each of them looks at the disability issue using different methodologies, and so they complement each other. While the latter approach explores the aspirations and needs of persons with disabilities within a specific social context in a comprehensive manner, the former looks at the factors that determine the disability condition, facilitating the analysis and the measurement of disability for policy design purposes. One focuses on the intuitive and exploratory observation of phenomena which are easy to perceive and understand in some particular human contexts, while the other deals with the functional dimensions of existence and the well defined factors that are interacting one with the other.

The Observation and Measurement of Disability

In the first part of this paper we described the various paradigms that can be envisaged when undertaking disability research. The most sophisticated approach, which tries to deal with the overall complexity of disability, is related to the capability approach extended by the phenomenological framework that implies addressing issues such as collective agency and responsibility.

Within this framework, the challenge is to find ways by which disability can be observed and measured within a given socio-cultural context. Referring to the capability approach has a direct impact on the methodology that can be used. This is true both for the collection of information, which can be done using a variety of instruments, and for the analytical methods that are used to deal with field data. In the following section, we will review these two aspects.

The Need for Appropriate Data Collection Tools

The measurement of disability, once the capability paradigm is adopted, implies collecting information about a series of topics related to the prevalence of disability, the quality of life of people with disabilities, the perception of their difficulties, their aspirations to function, and the interrelationships between the disabled and the non-disabled. All require appropriate data collection instruments.

The example of the National Disability Survey in Afghanistan

The National Disability Survey in Afghanistan (NDSA), which was carried out in 2004-2005, provides a good example of such an instrument. It was a cross sectional, random sample survey of 5130 households selected throughout all provinces of Afghanistan. Its objective was to identify the disabling situation, and to describe the living conditions and social participation of people with disabilities, in order to help to design specific policies that could improve their quality of life.

Because disability was a sensitive issue in the country, it was essential to ensure that the diverse groups of people with disabilities were adequately surveyed. This is because the most stigmatised and vulnerable groups tended to be ignored, while more socially-accepted groups tended to be over-represented. To avoid this risk, the solution adopted was to use the Afghan word for "difficulty" instead of that for "disability". This mitigated the negative social representation linked to "disability", thus minimizing the corresponding stigma. This ensured that those who face prejudice, such as people with congenital disorders or mental illness, were not left out. It also makes it possible for public policy design to take into account situations that are not labelled as 'disability', but which do lead to real difficulties in daily functioning. For instance, older people with sensory difficulties do not describe themselves as "disabled", but rather as "old". This approach, identifying difficulties that anyone might face, provides a better assessment of the disability situation.

Implementing the NDSA was the first step in constructing a long-term disability strategy intended to include and empower people with disabilities. Its objectives, and the related information that it was expected to deliver, were identified through a participatory process, which involved various stakeholders including representatives of DPOs, disability experts and researchers from universities, various NGOs, international institutions (UNDP, World Bank), and bilateral aid donors. The

participation of such a wide range of partners offered a unique opportunity to promote awareness about disability issues and existing prejudice towards persons with disabilities, particularly those with mental illness and intellectual disabilities. It also generated a feeling of ownership, making it easier to motivate people to work for its achievement. This was clearly apparent, for example when NGO partners provided the teams in the field with logistic support, and when disabled people's organizations (DPOs) used the initial findings to demand appropriate action involving the provision of specific disability services.

A series of objectives were established during the partnership meetings. The first thing required was to provide an accurate measure of the prevalence of various types of disability. Both the Ministry of Martyrs and Disabled and various donor agencies wanted a more accurate estimate of the rate of prevalence of disability within the population.

Secondly, an assessment of the degree of access to services was required to compare what needs were expressed by people with disabilities relative to the opportunities offered to them. These included achievements in terms of rehabilitation, education, employment, vocational training, social integration and political participation. The various DPOs strongly advocated the provision of such information, since they needed indicators about access to services and the level of social participation to provide persuasive arguments to obtain improvements from the policy agenda.

The third objective required identifying the barriers, difficulties and prejudice that disabled people may face in everyday life. Researchers, experts, and fieldworkers from NGOs emphasized this issue, as experience has shown that efforts can often be curbed and hampered by stigmatisation and marginalisation.

The final objective consists of providing strategic guidelines on how to overcome the current difficulties faced by people with disabilities. This need for a consistent strategy has been already highlighted by many experts (Bakhshi and Trani, 2007; Gautron and Jarrar, 1996; Krefting and Krefting, 1999; Rathnam et al., 2003). The survey provides an opportunity to address the lack of policy coordination, the insufficiency of access to services, the low levels of employment and the need for economic support.

To collect appropriate data, the NDSA adopted a definition of disability inspired by the ICF and the capability approach and based on functioning limitations and activity participation. It concentrates on the functionings of individuals who are included in families and communities, and uses categories similar to those established by the Ministry of the Martyrs and the Disabled, which makes comparisons easier to carry out. People with disabilities were identified by a screening process that included 27 questions related to physical, sensorial and mental disabilities. Each question referred to a specific type of difficulty that hinders them in carrying out their daily activities.

The various questionnaires were designed to reflect the hard facts of current daily life for people with disabilities, and identify opportunities for change. Some questionnaires focus on general issues related to the living conditions. They look at the ways people with disabilities experience the reality of life, and describe the changes that they would like to see in their living conditions. The questions are

intended to reflect the prejudice and discrimination they suffer, and ask for suggestions that would ensure long-term changes, by considering the concerns of people and communities about development strategies.

Other questionnaires focus on specific domains, such as health, education, employment and income. They look at the resources available to people with disabilities, and the conditions of access to these resources. They are intended to identify the physical, social and psychological barriers that prevent access to these resources, and determine ways to overcome these barriers. They try to assess the range of opportunities that are available, and try to identify the means to enhance people's capabilities.

It is worth noting that it was only at the end of the questionnaire that the word 'disability' was finally used in order to see to what extent these people considered themselves to be disabled.

The NDSA was carried out in a complex context, where it was difficult to reach a clear consensus on what disability is and how to assess it. This is often the case when the definition of disability has to be adjusted to fit the social and cultural context. Moreover, the competing expectations of the various partners, as well as security issues during field operations, impeded the whole process. Nevertheless, this survey provided a series of notable insights obtained in the field, and related to the capability paradigm, that could be used to improve subsequent data collection operations.

Improving Data Collection Instruments

In the light of the NDSA experience we suggest three ways through which the data collection process could be improved. The first is to refer to a capability paradigm extended by the phenomenological approach. As we have already seen, the phenomenological approach makes it possible to deal with issues such as collective capabilities and responsibility. This leads to the collection of additional information to describe the processes by which collective capability is generated,and responsibilities towards the vulnerable discharged. This may involve adding specific modules dealing with the relationships between the various groups of disabled and non-disabled people, their reciprocal perceptions and social representations, the level of collective capability and the underlying responsibility. Naturally, this implies considering the social preconceptions that people may have about disability and about disabled people, including issues such as shame and stigma. A fundamental intention of NDSA was a desire to reflect social reality through appropriate field work, and it has already led to the introduction of some of these variables, particularly those concerning people's social representations.

The second improvement is to adopt a participatory approach to defining objectives and devising tools, as the NDSA did. The participatory approach is a pre-requisite for understanding the context and dynamics of disability in a country, and it is often the lack of an effective mechanism to ensure participation at all stages of the process that is responsible for some of the shortcomings of disability policy as it stands today. Participation makes it possible to look at different aspects of the situation, and the links between them. Alternative views can be expressed by the various stakeholders about how to define the objectives of the survey and implement it in the field.

Furthermore, the extended capability perspective allows people to define the disabling situation in terms of functionings and freedoms, and to identify the priorities to be tackled. Focusing on what people can achieve, and asking them to define their possibilities and to identify the existing barriers that hamper them most, provides essential information for defining policy.

In fact, it is not easy to set up an effective democratic debate among the various stakeholders, as 'the general picture of development work in Afghanistan is of a series of top-down programs that recognize, on paper, the importance of consulting local people but, in practice, generally fail to do this in a way that goes beyond discussing "shopping lists" of local needs' (Coleridge, 1999 p.151).

Identifying an appropriate investigation system is the third insight. Cross-sectional surveys based on household samples are the main instruments used to collect information about the quality of life of people with disabilities. This information includes individual characteristics, access to goods, services and assets, rights and opportunities in terms of employment and income, and the constraints people with disabilities face. It is used to assess people's functionings and to compare people with disabilities with the non-disabled. Qualitative information complements this view by collecting data about people's aspirations, how they perceive their own situation in terms of success and failure, the reasons and motivations for socioeconomic change, their social interaction and reciprocal perception, and about the values they believe in. These data are more specifically related to the extended view of the capability paradigm. Adding specific modules or additional questions takes into account the recommendations made by participatory meetings to make the survey match the socioeconomic reality as well as the requirements of policy makers. Cross-sectional investigation provides an excellent picture of the overall situation of disability within a country at a given time. However, it is difficult to conduct regular national surveys in order to monitor results over time. These are costly to perform, and difficulties may arise when the security situation deteriorates.

A complementary investigation tool can then be envisaged to assess the 'disability changes' resulting from the policies already implemented. Setting up a specific 'disability observatory' to monitor a small panel of selected people is one solution. This makes it possible to measure the improvement or deterioration of the disability situation over time. Observatories are usually organised once a large scale survey has already been conducted, and has provided information about the various categories of population. By selecting a representative sample among these categories, extracted using typology analysis and relevant questionnaires, the observatory can deliver regular information about the disability situation and its progression. Observatories have already been set up in some countries to assess the change in the quality of life of various groups within a population (Droy et al., 2000).

The Search for Relevant Analytical Methods

Analysing disability within the framework of the capability paradigm requires specific methods to treat the data. The methods must be intended to provide answers to the objectives collectively defined during the participatory meetings. These objectives include estimating the prevalence of disability, as well as the living conditions of

people with disabilities, but also comparing their capabilities, their functionings and freedoms.

Various Analytical Steps

Three main analytical steps have to be distinguished when dealing with the analysis of the data collected. The first one is related to measuring people's capabilities. Since, by definition, capability includes two dimensions (i.e. the functionings or effective achievements on the one hand, and the freedom to choose among various alternatives, on the other), disability is considered to be a lack of some capabilities. The first step therefore consists of estimating the functionings and freedoms that peoples with disabilities do or do not have.

The second step involves the comparative analysis of capabilities between disabled and non-disabled people in terms of achievements and freedoms to achieve. Naturally comparisons include the standard of living, access to goods and services, assets, the rights, opportunities and constraints; but also aspirations, reciprocal perceptions and self representation. Comparisons can also be made between the responses of people with different characteristics such as gender, age group, type of impairment, ethicity.

The third step involves time analysis to monitor the changes in disability and in the conditions of living of people with disabilities. Assessing the improvement or the deterioration in capability is an important issue for public policies intended to ensure equal opportunities for disabled and non-disabled people. Time analysis estimates the changes in the situation of people with disabilities concerning their opportunities, effective achievements and freedoms to achieve what they value. As seen before, this may require the implementation of appropriate observatories, to monitor panels of households that include people with disabilities.

Measuring Functionings and Estimating Freedoms

With regard to the choice of appropriate analytical tools, a distinction must be made between the assessment of the functioning dimension and the evaluation of the freedom dimension of capability. Analysing people's effective achievements, or functionings, can be done easily. The prevalence of disability, the distribution of disabilities among the population, the level of poverty, living conditions, access to goods and services, assets possessed, social and economic opportunities, social participation, and social relationships, can all be assessed using current analytical packages.

However, synthetic indicators will have to be devised to deal, for instance, with the level of autonomy of a disabled person, or with the level of responsibility accepted by a non-disabled person. This implies, firstly, defining in axiomatic terms the properties of such indicators; and secondly, creating a synthetic number by combining several variables with different weights. Sophisticated analytical instruments are required like factorial analysis, for instance, to highlight the linkages between selected variables, or cluster analysis and segmentation, to identify homogeneous categories of people.

The example below presents a multiple correspondence analysis which was used to explore the linkages between the characteristics of people from Afghanistan and their

level of poverty as a deprivation of basic capabilities (Nussbaum and Sen, 1993; Sen, 1999). It aims at identifying which groups of individuals are deprived of basic capabilities.

Multiple correspondence analysis is an exploratory technique which allows analysing multidimensional tables (Burt matrix) highlighting the correspondence between rows and columns (Benzecri, 1973, 1982,1992; Greenacre, 1984; Greenacre and Blasius, 2006). It explores a data set structure, searching the main relationships that may exist between response categories of categorical variables without making *a priori* assumption on the nature of these relationships. Numerical values are assigned to individuals and to the variable response categories (for instance, married, single, widowed for marriage status) based on the observed multidimensional Euclidian distances between them. As a result, close individuals are clustered together and individuals which are far apart are clustered in different groups. This analysis defines clusters within which the overall population is divided into homogeneous subgroups. The corresponding sample, from the NDSA data base includes 2,223 individuals above 10 years old, of which 841 were identified as disabled.

We considered nine active variables, with twenty nine response categories related to individual demographic and social characteristics and to basic capabilities:
- gender;
- being disabled or not;
- living in urban or rural area;
- ethnicity;
- employment situation;
- school attendance;
- possession of several assets (TV, car, radio, land and house);
- access to quality food;
- use of health services during the year previous to the interview.

Three other variables, with eleven response categories, were added as illustrative variables to complete the description of capabilities deprivation in Afghanistan. Since they were not active, these variables were not used to calculate the Euclidian distances:
- gender of the head of household;
- type of impairment;
- age group;

We selected the map of the first two dimensions in order to visualise the relationships between individual characteristics and basic capabilities that are of particular interest to us. The first two factors represent 21.14 percent of the total inertia which measures the dispersion of the observations in the full dimensional space. Figure 1 displays a two-dimensional projection of the corresponding set of active and illustrative variables' response categories. The contributions to the axes of the active variables are given by Table 1 (see annex).

Figure 1 Multiple correspondence analysis of capability deprivation for people aged above 10
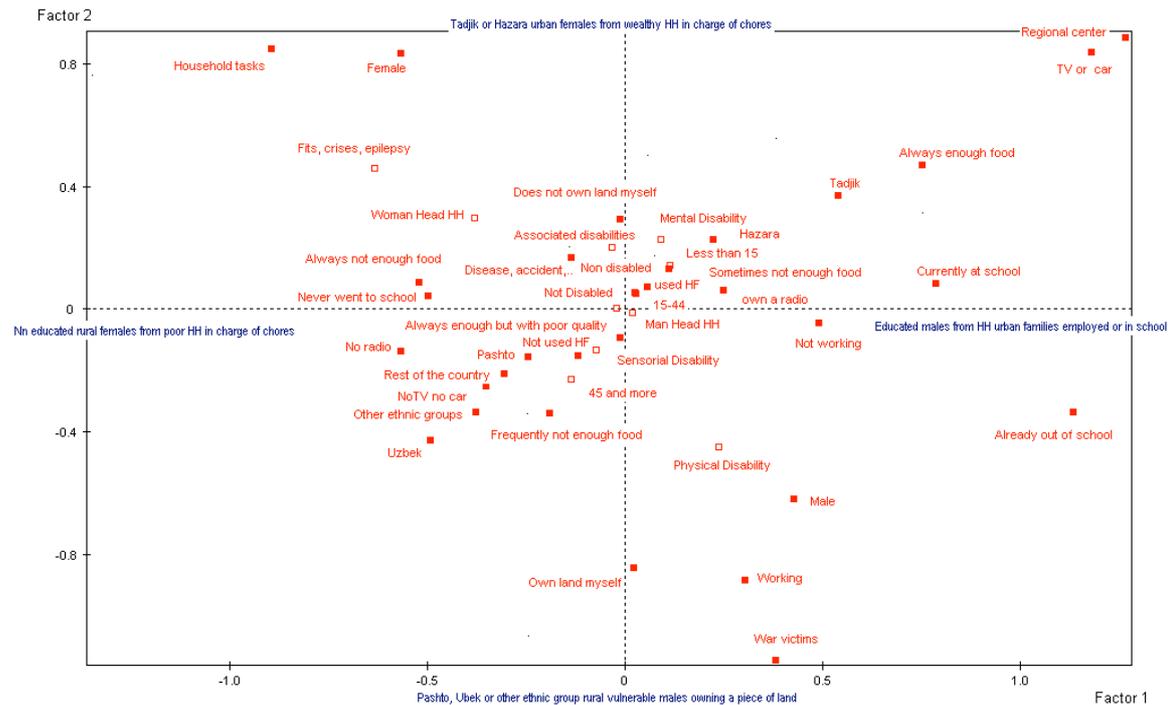
The analysis shows a clear distinction between the situation of men and women in regard to basic capabilities in Afghanistan. Women are clustered on the negative side of the first factor and the positive side of the second factor, whereas men are clustered respectively on the positive side of the first factor and the negative side of the second factor. The analysis of the test values shows that the negative side of the first factor is characterised by women living in rural areas from Pashtu or Uzbek backgrounds, deprived of basic capabilities (i.e. having no access to school and the labor market, lacking basic assets such as radio and proper food share). The positive side in this analysis shows the reverse pattern: men of Tajik origin living in urban areas, accessing school and the labor market, possessing high value assets such as a TV or a car. The supplementary elements indicate that the negative side is correlated with having a female head of household. The second factor is characterised in its negative part by men of Pashto or Uzbek origin, who have access to the labor market as farmers who own some land, who live in rural areas and have been able to access school, but are from vulnerable backgrounds as they do not own assets such as a car or a TV and frequently do not have a sufficient food share. Some are disabled because of the war. They are in contrast with women of Tajik origin, living in urban areas, with access to health facilities, from rather wealthy backgrounds (their household owns a TV) but with no access to the labour market or to the land.

To complete the analysis, we used a hierarchical clustering. Figure 2 shows the results of the hierarchical clustering computed after the above MCA. The hierarchical clustering is based on the set of the cases characterized by the first factorial coordinates created by the factorial analysis procedure. Ward's aggregation criterion is applied. This algorithm performs a bottom up clustering using the criteria of the variation of the variance (Lebart, Morineau and Piron, 2004).

Figure 2 Clustering of relative deprivation of basic capabilities in 5 groups for people aged above 10
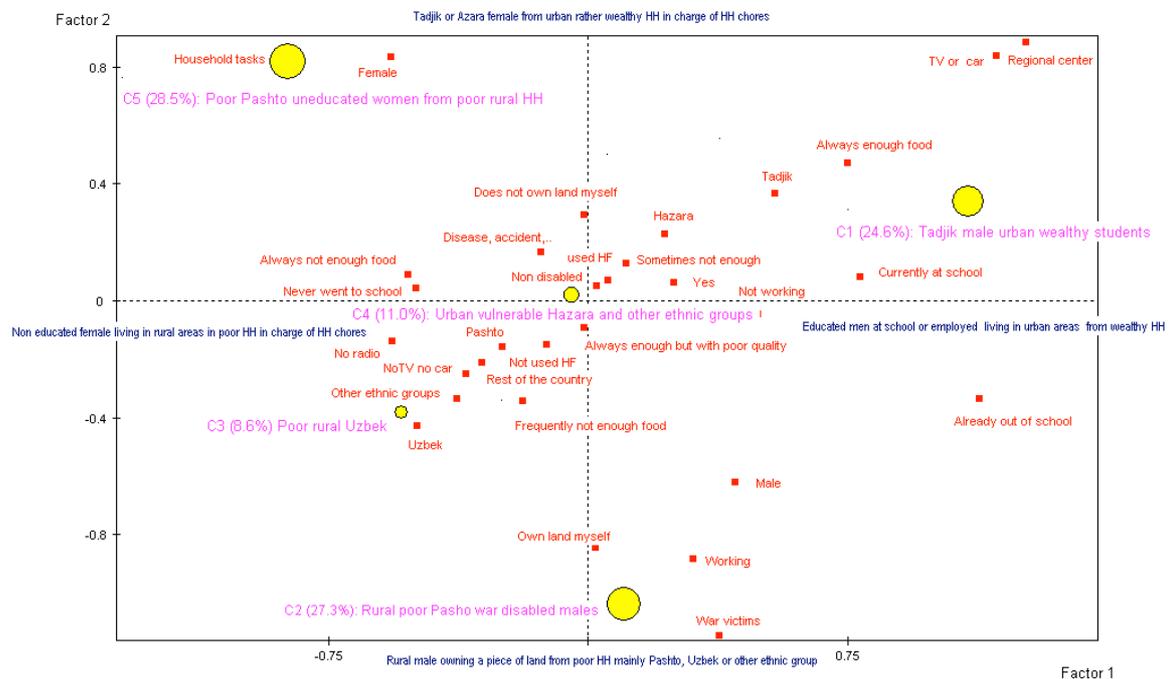
The clustering identifies a relevant distribution into five groups (see Table 2 in annex). The first group (24.6% of the population) is composed of educated Tadjiks, students or active people, living in urban areas. They have a wealthy background, as they own cars and TVs. The second group (27.3%) brings together poor Pashto males living in rural areas, who have a disability due to the war and are working in farms. The third group is smaller (8.6%) and is composed of poor rural people from Uzbek and other ethnicities which are not well represented in Afghanistan. They don't have easy access to health facilities, they often lack food and have no assets. The fourth cluster gathers mostly non-disabled urban Hazara who generally do not possess land. Cluster five (28.5%) aggregates mainly uneducated Pashto women, excluded from the labor market, living in poor households in rural areas. It also includes disabled women, who have been impaired by accident or disease. This is one possible clustering of the Afghan population. It shows how various criteria of vulnerability (such as low level of assets, exclusion from school and the labor market, etc.) may define different groups within the Afghan population, providing new insights for the analysis of people's behaviour.

Estimating people's freedoms is a complex issue. Functionings can easily be observed through a cross-sectional survey or an observatory, whereas freedoms have to be deduced as the yet-to-be observed potentiality of a given individual, whether disabled or not. Freedom represents the individual's potentiality to achieve specific chosen functionings if the opportunity arises.

Therefore estimating the potential capability of an individual requires analytical inference techniques, such as predictive micro-modelling, latent variables modelling, fuzzy sets techniques, bootstrap and jackknife methods, factorial and typology analysis, etc. Applying these techniques to a sample of individual data that already

measures the effective functionings of people makes it possible to estimate the potential set of capabilities, by generating all the functionings that a given human group may engage in in a given context under a series of constraints. Naturally, the limitation of such a process is that the set of potential functionings is related to the questions asked by the survey. If important functionings are omitted, then the capability set will not really be comprehensive. Referring to the phenomenological approach, which extends the set of variables to be considered, is therefore a promising way to address the complexity of the disability phenomenon.

The measurement of collective capabilities raises other issues. The collective functioning of a group is the outcome of the interactions between all the individuals in the group. This may not be simply the sum of all individual functionings because, in a context of internal conflict, the collective capability may be reduced. On the other hand, in a context of collaborative behaviour, an association of several people generates a collective capability set, which may exceed the sum of the capability sets of all the members of the group. Appropriate ways to measure such a phenomenon, in a specified context require methodological innovation. Models that are based on social networks, and on the economic theory of games, provide interesting and appropriate tools for further research in that direction.

Conclusion

In this paper we have tried to show that among the available models which address disability research, the model based on the capability approach offers the best way to understand and analyse disability issues. This is confirmed by comparing this model to the medical, social, and ICF-related models.

However, the capability approach as proposed by Sen and Nussbaum can be improved further by switching the philosophical reference framework from analytical philosophy to phenomenology. The latter introduces more subtleties in understanding the observed behaviour of people with disabilities, embedded in a complex social context. This is particularly true with regard to the ethical basis of the interconnections between disabled and non-disabled people. For these reasons the issues of collective capabilities and responsibility towards the most vulnerable were addressed in order to provide new insights into contemporary development policy and practice.

In the light of these reflections, the NDSA has offered a very interesting first case study. Its design included several features and insights from the various conceptual frameworks which are presented in this paper. First, it went beyond the usual medical and social paradigm to measure disability prevalence on the basis of the ICF model and the capability approach. The first two paradigms value medical rehabilitation (through wheelchairs, artificial limbs, etc.) and social reinsertion. In both cases, what is important is the adjustment of society to the needs of disabled people. The ICF paradigm provides a way to assess this situation through concrete measures.

The NDSA has already delivered a lot of information about the prevalence, relative living conditions of people with disabilities, and in-depth analysis of education, health and gender issues (Bakhshi et al., 2006; Trani and Bakhshi, 2006; Trani et al, 2006). However, most of these results refer to the effective achievements of people, which

are easier to identify in the short term. What is being considered at this stage is the possibility of adjusting the environment in order to improve the disability situation.

Nevertheless, the NDSA also constituted a considerable innovation by attempting, through the design of its questionnaires, to consider the agency needs and expectations of people with a disabilities, thus leading to the capability paradigm, which is based on people's agency and freedom to achieve what they consider valuable in life. Naturally, this requires measuring people's freedoms, i.e. their potential ability to decide and choose the functionings that they value. This still remains a challenge. This challenge is not specific to disability, but is related to the measurement of the capability concept itself, which requires appropriate instruments. Research is underway to provide such tools through the use of fuzzy sets analysis, bootstrap and jackknife methods, latent variable modelling, and so on.

Even though adopting the capability paradigm really does constitute an improvement, some key features related to disability analysis are still ignored. For instance, people with disabilities will only be able to draw on their own agency, while by interacting with non-disabled people they could have generated a collective agency. The capability approach, as traditionally conceived by A. Sen and M. Nussbaum, does not take this into account. This is an issue that requires the non-disabled to accept responsibility for disabled people, an *ex-ante* responsibility that interacts with the freedom of non-disabled people.

Dealing with such issues requires going further than the usual analytical vision of capabilities, which is based on a functional investigation of the causes and effects of phenomena. It implies a phenomenological consideration of the intentions and aspirations of people, whether disabled or non-disabled, and these are embedded in social networks. An 'extended capability paradigm' results from this approach. It includes, for instance, concerns such as the individuals' social perception and representation, the aspirations of people with disabilities, and the role of social linkages within a community.

However, there is a risk that elaborating a more comprehensive framework to study disability by combining the capability approach and the phenomenological view could make it even more complex to measure. More sophisticated tools for analysis may be required, which will make the assessment of disability a more challenging task. This is a common paradox in social sciences: the need for a better understanding of socioeconomic reality may increase the complexity of the analysis. However, it is only by investing in field operations that the observation and analysis methodologies can be improved in order to solve this paradox. Such investment will help to determine to what extent the capability paradigm can be effectively used in the context of policy intended to improve the inclusion of disabled people. This issue is currently at a very embryonic state of discussion and it is hoped that this paper will serve as an initial contribution to a debate that will need to be further developed in the future.

References

Altman, B. M. (2001). 'Definitions of disability and their operationalization, and measurement in survey data: an update' in B. M. Altman & S. N. Barnatt (Eds.), *Exploring theories and expanding methodologies: where we are and where we need to go*. Oxford: Elsevier Jai. pp. 77–100.

Anand, P.B. (2007) 'Capability, sustainability, and collective action: an examination of a river water dispute', *Journal of Human Development*, 8(1): 109-132.

Amundson, R. (2000). 'Against Normal Function'. *Studies in History and Philosophy of Biological and Biomedical Sciences*, 31:33-53.

Bakhshi, P. and Trani, J.-F. (2006). *Towards inclusion and equality in education? From: Assumptions to facts.* Lyon: Handicap International

Bakhshi, P. and Trani, J.-F. (2007). 'Household Survey: A Relevant Tool for Gathering Information on Disability?', *Journal for Disability and International Development*, 2: 13-23.

Bakhshi, P., Trani, J.-F. and Noor Ayan, A. (2006). *Towards Well-Being for Afghans with Disability: the Health Challenge*. Lyon: Handicap International. Retrieved 6 December 2006 from http://www.handicap-international.org/dans-le-monde/nos-pays-dintervention/programmes/afghanistan/afghanistan-toolkit-on-disability/index.html

Bakhshi, P., Trani, J.-F. and Rolland, C. (2006). *Conducting Surveys on Disability a Comprehensive Toolkit*. Lyon: Handicap International.

Ballet, J., Dubois, J.-L. and Mahieu, F.-R. (2007). 'Responsibility for Each Other's Freedom: Agency as the Source of Collective Capability', *Journal of Human Development*, 8 (2) pp. 185-201.

Barton, L. (1993). 'The Struggle for Citizenship: The Case of Disabled People', *Disability, Handicap & Society*, 8(3): 235-248.

Baylies, C. (2002). 'Disability and the Notion of Human Development: questions of rights and capabilities', *Disability & Society*, 17:7: 725 -739

Benzecri J.P. (1992). *Correspondence Analysis Handbook*. New York: M. Dekker

Benzecri, J.-P. (1973, 1982). *La taxinomie : analyses des correspondances*, vol.1, Paris : Bordas 1973 and vol.2, Paris : Dunod 1982.

Burchardt, T. (2004). 'Capabilities and disability: the capabilities framework and the social model of disability', *Disability and Society*, 19(7), 735–751.

Critchley, S. & Bernasconi, R. (2002). *The Cambridge Companion to Levinas*, Cambridge: Cambridge University Press.

Droy, I., Ratovoarinony, R. and Roubaud, F. (2000). 'Les observatoires ruraux a Madagascar 1995-98: une méthodologie originale pour le suivi des campagnes', *Stateco*. Paris : INSEE.

Dubois, J.-L., Brouillet, A.-S., Bakhshi, P. and Duray-Soundron, C. (Ed.) (2008). *Repenser l'action collective. Une approche par les capabilités*. Paris: L'Harmattan.

Ferguson, H (2006). *Phenomenology and Social Theory: Insight and Experience in Modern Society*. New York: Sage.

Foster J.E. and Handy C. (2008). External capabilities. OPHI working papers series, 8 Paper retrieved on April 30th 2009 from website: http://www.ophi.org.uk/pubs/OPHI_WP8.pdf.

Gautron, B. and Jarrar, A. (1996). *Report on a Mid-term Evaluation*, CDAP/UNOPS. Kabul: Authors.

Heidegger, M. (1927). *Being and Time*. New York: HarperCollins Publishers 2008.

Husserl, E. (1931). *Cartesian Meditations: An Introduction to Phenomenology*. New York: Springer 1977.

Ibrahim, S. (2006). 'From Individual to Collective Capabilities: The Capability Approach as a Conceptual Framework for Self-help', *Journal of Human Development*, 7(3): 397-416.

Ibrahim, S. (2008). 'Collective agency: Wider freedoms and new capabilities through self-help', in *Repenser l'action collective: une approche par les capabilités'*, pp. 61-81.

Jonas, H. (1979), *Le principe responsabilité*, Trad. française 1990. Paris: Champs, Flammarion. Translation from *Das Prinzip Verantwortung*. Frankfurt: Insel Verlag.

Jonas, H. (1984). *The Imperative of Responsibility. In Search of an Ethics for the Technological Age*. Chicago: University of Chicago Press. Translation from *Das Prinzip Verantwortung*. Frankfurt: Insel Verlag 1979.

Greenacre, M.J. and Blasius, J. (Eds.) (2006). *Multiple Correspondence Analysis and Related Methods*, Boca Raton, Florida: Chapman & Hall/CRC.

Greenacre, M.J. (1984). *Theory and Applications of Correspondence Analysis*. London: Academic Press.

Hahn, H. (1986), 'Public Support for Rehabilitation in Programs: The Analysis of US Disability Policy', *Disability, Handicap & Society*, 1(2): 121-138.

Krefting, D. and Krefting, L. (1999). *Comprehensive Disabled Afghans' Programme Report*, Kabul.

Lebart, L., Morineau, A. and Piron, M. (2004). *Statistique exploratoire multidimensionnelle*, Paris : Dunod.

Levinas, E. (1985). *Ethics and Infinity*. Pittsburg: Duquesne University Press. Translation from *Ethique et Infini*. Paris: Fayard 1982.

Loeb, M., Eide, A. and Mont, D. (2008). 'Approaching the measurement of disability prevalence: the case of Zambia'. *ALTER Revue européenne de recherche sur le handicap*, 2: 32–43.

Madans, J. (2006). 'The definition and measurement of disability: The work of the Washington Group'. Powerpoint presentation November 2006. Accessed on CDC website at http://www.cdc.gov/nchs/citgroup.htm on 1/2007.

Marks, D. (1999). *Disability: Controversial Debates and Psychosocial Perspectives*. London: Routledge.

Me, A. and Mbogoni, M. (2006). 'Reviews of practices in less developed countries on the collection of disability data' in B. M. Altman and S. N. Barnartt (Eds.), *International views on disability measures: moving toward comparative measurement, research in social science and disability*, pp. 63–88. Oxford: Elsevier Jai.

Mitra, S. (2003). 'The capability approach of disability', in Proceedings from the third conference on the capability approach *From Sustainable Development to Sustainable Freedom*, 7th–9th September 2003, Pavia.

Mitra, S. (2006). 'The Capability Approach and Disability'. *Journal of Disability Policy Studies*, 16(4): 236-247.

Mont, D. (2007). 'Measuring disability prevalence', *Social Protection Discussion Paper* No. 0706, World Bank. Washington. Paper retrieved on April 20th 2008 from website http://siteresources.worldbank.org/DISABILITY/Resources/Data/MontPrevalence.pdf.

Nussbaum, M.C. (2006). *Frontiers of Justice: Disability, Identity, Species Membership*. Cambridge, Mass.: Belknap Press,

Nussbaum, M.C.(2000). *Women and Human Development. The Capabilities Approach*, Cambridge: Cambridge University Press.

Nussbaum, M.C. and Sen, A.K. (1993). *The Quality of Life*. Oxford: Clarendon Press.

Olivier, M. (1983). *Social work with disabled people*. Basingstoke: Macmillan.

Olivier, M. (1996). *Understanding disability: from theory to practice*. Basingstoke: Macmillan.

Olson, M. (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, Mass.: Harvard University Press.

Pfeiffer, D. (2001). 'The Conceptualisation of Disability', in B.M. Altman and S.N. Barnatt (Eds), *Exploring Theories and Expanding Methodologies: Where we Are and Where we Need to Go*, vol. 2 pp. 29-52. Oxford: Elsevier Jai,

Rathnam, M., Lang, R. and Reha, M. (2003). 'Comprehensive Disabled Afghans' Programme' – *CDAP External Evaluation Mission Report*.

Rawls, J. (1971), *A Theory of Justice*, Harvard University Press, Cambridge.

Ricoeur, P. (2005). *The Course of Recognition*. Cambridge, Mass.: Harvard University Press. Translation from *Parcours de la reconnaissance*. Paris: Stock 2004.

Ricoeur, P. (1992). *Oneself as Another*. Chicago: University of Chicago Press. Translation from *Soi-même comme un autre*. Paris: Seuil1990.

Russell, B. (1919). *Introduction to Mathematical Philosophy*. London: Routledge 1993.

Sandler, T. and Arce, D. (2007). 'New Face of Public Assistance: Public Goods and Changing Ethics', *J. Int. Dev.* 19, 527–544.

Schutz, A. (1967). *The Phenomenology of the Social World*. Evanston: Northwestern University Press. Translation from *Der sinnhafte Aufbau der sozialen Welt. Eine Einleitung in der verstehende Soziologie*. Vienna: Springer Verlag 1932.

Sen, A.K. (1999). *Development as Freedom*. New York: Knopf.

Sen, A.K. (1985). *Commodities and Capabilities*. Oxford: Oxford University Press 1999.

Sen A.K. (1973). *On Economic Inequality*. Oxford: Oxford University Press 1997.

Sen, A.K. (1982). 'Equality of What?' in *Choice, Welfare and Measurement*. Oxford: Blackwell, reedited Harvard University Press, pp. 353-369.

Stewart, F. (2005). 'Groups and Capabilities', *Journal of Human Development*, 6: 185-204.

Terzi, L. (2005). 'Beyond the Dilemma of Difference: The Capability Approach to Disability and Special Educational Needs', *Journal of Philosophy of Education*, 39(3): 443-459.

Trani, J.-F. and Bakhshi, P. (2006). *Understanding the Challenge Ahead: Executive Summary Report*. Lyon: Handicap International.

Trani, J.-F. and Bakhshi, P. (2008). 'Challenges for assessing disability prevalence: The case of Afghanistan', *ALTER Revue européenne de recherche sur le handicap*, 2: 44–64.

Trani J.-F., Bakhshi, P. and Dubois, J.-L. (2006). *Understanding Vulnerability of Afghans with Disability Livelihoods, Employment, Income*. Lyon: Handicap International.

Van Leit, B. (2008). 'Using the ICF to address the needs of people with disabilities in international development: Cambodian case study'. *Disability and Rehabilitation*, 30:12, 991-998.

Wittgenstein, L. (1921). *Tractatus Logico Philosophicus*. London: Routledge 2001.

World Health Organization (2001). *International Classification of Functioning, Disability and Health*, Geneva.

Table 1. Definitions of Factors 1 and 2 of the MCA by active variables

Variable label defining Factor 1	Category label	Test-Value	Weight
School Attendance	Never went to school	-31.68	1444
Regional urban centers	Rest of the country	-30.11	1796
Possession of TV and Car by the Household	No TV, no Car	-29.88	1705
Employment Situation 3 categories	Household tasks	-27.96	705
Gender	Female	-22.34	957
Do you own a radio?	No	-17.73	674
Ethnic groups in 5 categories	Pashto	-11.71	1090
How often does your household get enough to eat?	Always not enough	-10.35	346
Ethnic groups in 5 categories	Uzbek	-7.09	198
How often does your household get enough to eat?	Frequently not enough	-4.58	428
M I D D L E A R E A			
Possession of TV and Car by the Household	TV and Car	13.62	59
How often does your household get enough to eat?	Always enough	14.78	307
Ethnic groups in 5 categories	Tadjik	17.09	673
Do you own a radio?	Yes	17.58	1539
Employment Situation 3 categories	Not working	18.60	894
School Attendance	Currently at school	19.48	490
School Attendance	Already out of school	20.78	293
Gender	Male	22.36	1275
Possession of TV and Car by the Household	TV	27.13	416
Regional urban centers	Regional center	30.16	436
Variable label defining Factor 2	**Category label**	**Test-Value**	**Weight**
Gender	Male	-34.55	1275
Employment Situation 3 categories	Working	-25.95	628
Do you own land personally?	Own land myself	-23.35	571
Possession of TV and Car by the Household	No TV, no Car	-20.26	1705
Regional urban centers	Rest of the country	-19.99	1796
Cause of Disability in 2 categories	War victims	-15.03	158
How often does your household get enough to eat?	Frequently not enough	-7.76	428
Ethnic groups in 5 categories	Pashto	-7.21	1090
School Attendance	Already out of school	-6.45	293
Ethnic groups in 5 categories	Uzbek	-5.82	198
M I D D L E A R E A			
Did you use an health facility	used HF	4.45	1505
Cause of Disability in 2 categories	Disease, accident...	5.15	683
Possession of TV and Car by the Household	TV and Car	8.46	59
How often does your household get enough to eat?	Always enough	8.75	307
Ethnic groups in 5 categories	Tadjik	11.13	673
Possession of TV and Car by the Household	TV	18.69	416
Regional urban centers	Regional center	20.11	436
Do you own land personally?	Does not own land myself	22.62	1630
Employment Situation 3 categories	Household tasks	27.99	705
Gender	Female	34.66	957

Table 2. Hierarchical clustering in five groups by active variables

Group: CLUSTER 1 / 5 (Count: 549 - Percentage: 24.60)

Variable label	Response categories	% of category in group	% of category in set	% of group in category	Test-value	Weight
School Attendance	Currently at school	70.49	21.95	78.98	30.08	490
Employment Situation 3 categories	Not working	85.43	40.05	52.46	25.38	894
Do you Possess a Car or a TV?	TV or car	54.28	22.89	58.32	19.08	511
Regional urban centres	Regional centre	43.53	19.53	54.82	15.36	436
Ethnic groups in 5 categories	Tajik	54.83	30.15	44.73	14.05	673

Gender	Male	74.32	57.12	32.00	9.52	1275
Do you own a radio?	Own a radio	83.61	68.95	29.82	8.85	1539
How often does your household get enough to eat?	Always enough	25.68	13.75	45.93	8.78	307
Cause of Disability in 2 categories	Non disabled	75.23	62.28	29.71	7.31	1390
Do you own land personally?	Does not own land my	81.06	73.03	27.30	4.94	1630
How often does your household get enough to eat?	Sometimes not enough	20.40	16.98	29.55	2.36	379
Ethnic groups in 5 categories	Pashto	42.44	48.84	21.38	-3.41	1090
How often does your household get enough to eat ?	Frequently not enough	13.48	19.18	17.29	-3.95	428
How often does your household get enough to eat ?	Always not enough	10.02	15.50	15.90	-4.17	346
Cause of Disability in 2 categories	Disease, accident...	23.13	30.60	18.59	-4.39	683
Ethnic groups in 5 categories	Other	0.91	4.08	5.49	-4.76	91
Do you own land personally?	Own land myself	16.76	25.58	16.11	-5.57	571
Cause of Disability in 2 categories	War victims	1.64	7.08	5.70	-6.37	158
Ethnic groups in 5 categories	Hazara	1.46	8.02	4.47	-7.40	179
Do you own a radio ?	No radio	15.30	30.20	12.46	-9.10	674
Gender	Female	25.68	42.88	14.73	-9.52	957
Ethnic groups in 5 categories	Uzbek	0.36	8.87	1.01	-9.79	198
Employment Situation 3 categories	Working	11.84	28.14	10.35	-10.33	628
Regional urban centres	Rest of the country	56.47	80.47	17.26	-15.36	1796
Do you Possess a Car or a TV?	No TV no car	44.99	76.39	14.49	-18.93	1705
Employment Situation 3 cat	Household tasks	2.37	31.59	1.84	-19.44	705
School Attendance	Never went to school	14.03	64.70	5.33	-28.71	1444

Group: CLUSTER 2 / 5 (Count: 610 - Percentage: 27.33)

Variable label	Response categories	% of category in group	% of category in set	% of group in category	Test-value	Weig ht
Gender	Male	98.85	57.12	47.29	27.69	1275
Employment Situation 3 cat	Working	67.21	28.14	65.29	24.45	628
Cause of Disability in 2 categories	War victims	20.66	7.08	79.75	14.24	158
Do you own land personally?	Own land myself	45.57	25.58	48.69	12.81	571
Ethnic groups in 5 categories	Pashto	68.36	48.84	38.26	11.36	1090
Do you Possess a Car or a TV?	No TV no car	91.15	76.39	32.61	10.74	1705
Regional urban centres	Rest of the country	91.80	80.47	31.18	8.79	1796
School Attendance	Already out of school	23.28	13.13	48.46	8.25	293
School Attendance	Never went to school	73.77	64.70	31.16	5.53	1444
How often does your household get enough to eat?	Frequently not enough	25.74	19.18	36.68	4.67	428
Did you use an health facility	used HF	71.97	67.43	29.17	2.78	1505
Did you use an health facility	Not used HF	27.54	31.99	23.53	-2.73	714
How often does your household get enough to eat?	Always enough	9.02	13.75	17.92	-4.05	307
Employment Situation 3 cat	Not working	30.16	40.05	20.58	-5.87	894
Ethnic groups in 5 categories	Other	0.16	4.08	1.10	-6.83	91
Cause of Disability in 2 categories	Non disabled	48.69	62.28	21.37	-8.00	1390
Ethnic groups in 5 categories	Hazara	0.98	8.02	3.35	-8.67	179
Regional urban centres	Regional centre	8.20	19.53	11.47	-8.79	436
Ethnic groups in 5 categories	Uzbek	0.98	8.87	3.03	-9.34	198
Do you Possess a Car or a TV?	TV or car	8.36	22.89	9.98	-10.72	511
Do you own land personally?	Does not own land my	53.28	73.03	19.94	-12.47	1630
School Attendance	Currently at school	2.79	21.95	3.47	-15.28	490
Employment Situation 3 cat	Household tasks	2.62	31.59	2.27	-20.52	705
Gender	Female	1.15	42.88	0.73	-27.69	957

Group: CLUSTER 3 / 5 (Count: 192 - Percentage: 8.60)

Variable label	Response categories	% of category in group	% of category in set	% of group in category	Test-value	Weig ht
Ethnic groups in 5 categories	Uzbek	98.96	8.87	95.96	34.63	198
Regional urban centres	Rest of the country	99.48	80.47	10.63	8.58	1796
Do you own a radio ?	No	46.35	30.20	13.20	4.86	674

Did you use an health facility	Not used HF	47.40	31.99	12.75	4.58	714
Do you Possess a Car or a TV?	No TV no car	87.50	76.39	9.85	3.92	1705
Ethnic groups in 5 categories	Other	0.00	4.08	0.00	-3.51	91
Do you Possess a Car or a TV?	TV or car	11.98	22.89	4.50	-3.90	511
Did you use an health facility	used HF	52.60	67.43	6.71	-4.39	1505
Do you own a radio ?	Yes	53.13	68.95	6.63	-4.73	1539
Ethnic groups in 5 categories	Hazara	0.00	8.02	0.00	-5.34	179
Regional urban centres	Regional centre	0.52	19.53	0.23	-8.58	436
Ethnic groups in 5 categories	Tajik	1.04	30.15	0.30	-11.05	673
Ethnic groups in 5 categories	Pashto	0.00	48.84	0.00	-16.35	1090

Group: CLUSTER 4 / 5 (Count: 246 - Percentage: 11.02)

Variable label	Response categories	% of category in group	% of category in set	% of group in category	Test-value	Weight
Ethnic groups in 5 categories	Hazara	66.26	8.02	91.06	27.21	179
Ethnic groups in 5 categories	Other	33.74	4.08	91.21	18.36	91
How often does your household get enough to eat?	Always enough but with	45.12	34.27	14.51	3.67	765
Regional urban centres	Regional centre	26.83	19.53	15.14	2.89	436
Regional urban centres	Rest of the country	73.17	80.47	10.02	-2.89	1796
Cause of Disability in 2 categories	War victims	1.22	7.08	1.90	-4.31	158
How often does your household get enough to eat?	Always enough	3.25	13.75	2.61	-5.70	307
Ethnic groups in 5 categories	Uzbek	0.00	8.87	0.00	-6.56	198
Ethnic groups in 5 categories	Tajik	0.00	30.15	0.00	-13.51	673
Ethnic groups in 5 categories	Pashto	0.00	48.84	0.00	-18.74	1090

Group: CLUSTER 5 / 5 (Count: 635 - Percentage: 28.45)

Variable label	Response categories	% of category in group	% of category in set	% of group in category	Test-value	Weight
Employment Situation 3 cat	Household tasks	85.83	31.59	77.31	34.96	705
Gender	Female	94.96	42.88	63.01	33.18	957
School Attendance	Never went to school	96.54	64.70	42.45	22.20	1444
Ethnic groups in 5 categories	Pashto	69.29	48.84	40.37	12.25	1090
Do you own land personally?	Does not own land my	85.67	73.03	33.37	8.79	1630
Do you Possess a Car or a TV?	No TV no car	83.94	76.39	31.26	5.38	1705
Regional urban centres	Rest of the country	87.40	80.47	30.90	5.32	1796
How often does your household get enough to eat?	Always not enough	20.32	15.50	37.28	3.82	346
Do you own a radio?	No	35.91	30.20	33.83	3.62	674
Cause of Disability in 2 categories	Disease, accident…	35.43	30.60	32.94	3.05	683
Do you own a radio ?	Yes	63.31	68.95	26.12	-3.56	1539
Regional urban centres	Regional centre	12.60	19.53	18.35	-5.32	436
Do you Possess a Car or a TV?	TV or car	15.28	22.89	18.98	-5.50	511
Ethnic groups in 5 categories	Other	0.31	4.08	2.20	-6.60	91
Cause of Disability in 2 categories	War victims	1.57	7.08	6.33	-7.11	158
Do you own land personally?	Own land myself	13.07	25.58	14.54	-8.88	571
School Attendance	Already out of school	3.15	13.13	6.83	-9.75	293
Ethnic groups in 5 categories	Hazara	0.31	8.02	1.12	-10.16	179
Ethnic groups in 5 categories	Uzbek	0.00	8.87	0.00	-11.55	198
Employment Situation 3 cat	Not working	11.97	40.05	8.50	-18.03	894
School Attendance	Currently at school	0.16	21.95	0.20	-19.01	490
Employment Situation 3 cat	Working	1.89	28.14	1.91	-20.01	628
Gender	Male	5.04	57.12	2.51	-33.18	1275