

**Capability Dynamics:**  
**the importance of time to capability assessments**  
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**Abstract**

The paper examines the time dimension in the capability literature. It suggests that this literature has so far been limited to informational spaces that are static. This paper argues that assessments of quality of life and well-being are in fact dynamic and that are best understood from an evolutionary perspective. The question of capability dynamics is crucial to the issue of sustainable development.

The paper is divided into four parts. The first part reviews some issues in the capabilities literature addressing the role of time in the formulation of capability assessments. The second part introduces dynamic concepts that are commonly used in social sciences to grasp the influence of time. The third part operationalises the capability dynamics discussion by introducing the concept of "evolutionary tools" - a way of intertemporally assessing capabilities.

It is argued here that "becoming", in addition of "being" and "doing", is an important category of analysis and that this extension of the capability informational space is coherent with its emphasis on processes and the role of valuational activities. Development involves an *expansion* of basic freedoms, an expansion that might be seen as dynamic rather than static.

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## Introduction

The Capability Approach (thereafter CA), as put forward by Sen (1985a, 1985b, 1987, 1992 and 1999) and Nussbaum (1999, 2000), has provided an important contribution to the closely-related issues of quality of life, gender inequality, welfare economics, well-being and human development. The CA emphasises the importance of valuational activities as part of a characterisation of positive freedoms. It uses an informational approach to ethical questions, stressing the elements of choice and agency behind the constitution of a pluralistic view of moral valuation and judgement. As Sen (1987: 19) has argued, “Though the capability approach does not lead to one particular theory of valuation (but defines instead a class of such theories within a general motivational structure), nevertheless the principles underlying the valuation will require close investigation and scrutiny”. Investigation and scrutiny are part, in the Senian approach, of an evaluative and reflective exercise that should take place in the process of identification of certain “doings” and “beings” as objects of value. Nussbaum (2000: 5) notes that when *central human capabilities* are seen as specifically political goals, they might be understood as the object of an *overlapping consensus*, that presumably represents a process of building up social judgments.

Whatever might be the differences we may find in Nussbaum’s and Sen’s views on the importance of processes in the characterisation of the capability assessment exercise –probably reflecting their different beliefs in the possibility and desirability of achieving an objective measure of a “good life”- it seems that both attach a high significance to the role that *processes* play in the formulation of the CA. Indeed, one of the main tenets of the CA, namely, the issue of adaptive preferences (see Nussbaum, 2000, chapter 2), cannot be understood without proper consideration of the cumulative effects of time in shaping people’s perceptions of their own well-being. It might be interesting to note that processes need time to be formulated and that evaluative exercises might reflect some *path dependence* according to peoples’ own histories and evolution of their capacity of deliberation.

Capabilities, as an expression of individuals’ reflective evaluative choices, are part of our evolution as human beings, reflecting our thoughts, emotional development and plans for the future, our past, our sense of time and control over our lives in the present. In particular, by considering emotions as judgments of value, as argued by Nussbaum (2001: 140), we should not ignore that “Human beings experience emotions in ways that are shaped both by individual history and by social norms”. It must be noted that both depend on time to take shape and evolve.

As much as one might agree on the uncontroversial nature of the argument on the importance of time in the definition of the capability space, it is important to go beyond this simple acknowledgment and investigate the implications of expanding even further the informational space put forward by the CA towards concerns with time and temporal aspects related to the CA. By doing so we hope to provide a contribution to issues that involve core crucial temporal problems, such as the sustainability (sustainable development, sustainable consumption, etc) issue. For instance, both the Brundtland Commission and the contemporary definitions of sustainability (see WDR, 2002?2003) put emphasis on ethical notions of intertemporal inequality that have been extensively criticised (see Anand and Sen, 2000) for not having solid intertemporal ethical foundations. It is not the main aim of this paper to solve this issue or to provide this foundation but rather to contribute to furthering our understanding of the time dimension in the capability approach.

With this purpose, the paper is divided into four parts. The first part reviews some issues in the capabilities literature addressing the role of time in the formulation of capability assessments. The second part introduces dynamic concepts that are commonly used in social sciences to grasp the influence of time. The third part operationalises the capability dynamics discussion by introducing the concept of "evolutionary tools" - a way of intertemporally assessing capabilities.

### **Time in the Formulation of Capability Assessments : “being” and “becoming”**

Great emphasis has been given in the capability literature to what could be called *cross-sectional diversities* among individuals and societies. This was used to justify the argument that resources are imperfect indicators of well-being. In one of its most recent formulations, Sen (1999: 70-71) notes that the use of resources depends on distinct sources of variations such as personal heterogeneities, environmental diversities, variations in social climate, differences in relational perspectives and distribution within the family. The argument that some form of compensation might be needed for disadvantages puts emphasis on a static situation. Similarly, variations in environmental conditions are considered parametrically. However, one might wonder how to classify the often-used argument by Sen that (as Adam Smith argued in his *Wealth of Nations*), it would be important for individuals to have higher standards of clothing to be able to “appear in public without shame”. Would that have the status of a *universal value*, or of a higher-level functioning? This would be an absolute or relative deprivation of capabilities according to the historical evolution of standards in a

determined society or community. Similarly, Nussbaum's (1999, 2000) formulation of lists of *central human functional capabilities* is closely related to a static list of universal principles. Although there is no necessity in the view that this list should be static, it conveys an idea of principles whose universality should be intertemporal. The objective nature of many capabilities would not be affected by the passage of time.

Whereas both Nussbaum and Sen are correct in addressing the issue of universal values, based on "*beings*" and "*doings*", it might be interesting to investigate the possibility of adding a third and different category to this informational space, called "*becoming*" to the evaluative exercise proposed by the CA. That would not contradict the logic behind the CA. As Sen has originally put it (1985b: 169), he has pursued "an 'informational' approach to moral analysis which focuses on the admissibility and use of different types of information in moral valuation". His critique to Utilitarianism's informational parsimony seems to be accompanied by a defence of a pluralist informational format. It follows that a wider informational space seems to be preferable to a more limited one. Thus, if the informational space could be broadened by the inclusion of temporal information that could be behind the formulation of moral principles, that should be seen positively. Why should we exclude *a priori* any information that might have a particular intertemporal axiological significance to individuals?

Thus, this paper follows the strategy inaugurated by the CA, that is, the broadening of the informational approach to moral analysis, through the inclusion of information related to the passage of time in the reflective exercise characterised by the CA. It seems to fit well with the pluralistic nature of the CA. Alternatively, we might ask whether the reduction –common in the capability literature- of time-variant considerations to apparently time-invariant considerations could be done without losing something of importance. The capability to handle time seems to be an important aspect of a person. Time also seems to be at the core of the process of choosing that it is central to the constitution of capabilities.

It might be argued that to a certain extent, "*becoming*" is more important to a capability assessment than "*being*" and "*doing*". First, because becoming seems to be a good concept to make sense of the idea of choice, as the building up of a reflective valuation, emphasised by the CA. Secondly, because choice involves a *transfactual* notion of achieving a different position or state in the future than the one found in the present. Having a life that one desires is a process of choosing based on an *expectation* of becoming a different person or of doing something different. In many cases, the

nature of the evaluative exercise may be affected by *uncertainty* about the possible outcomes. Therefore, assessing what kind of life a person is leading, could include more than what she does succeed in considering as options among beings and doings. It could include her temporal capabilities, that is, her autonomy, agency, choice in “becoming” what she has reasons to become. Furthermore, choices may reflect *paths of becoming*, in which individuals may value different functionings differently in time. The exercise of choice might be less important at an early age than compared to a later stage in life. Children are not supposed to choose the best course of actions before developing some sense of consequence and responsibility in their lives. But this *path of becoming* should not be limited to the issue of children’s capabilities. It could be extended to any choice that would consider time into decision-making processes. Thus defined, becoming implies process and activity over time.

This might be of special importance in the often-used example of the disabled person in the capability literature. As the argument goes, a disabled person, *vis-à-vis* a normal person, would need a larger sum of resources to achieve the same functionings than a normal person would achieve. Yet, one might have reasons to believe that this *conversion-gap* between the disabled and the normal person might not be constant in time, since some functionings achieved by the normal person might evolve with time, increasing the gap between the two people. In other words, interpersonal variations in transforming resources into functionings might be a function of time. The agency aspect of a person seems to build upon time and this fact should be acknowledged to prevent important intertemporal asymmetries in the assessment of capabilities inequalities among different individuals.

In what follows we discuss three issues related to capability dynamics and the role of time in the conceptualisation of capability assessments. This list is far from being comprehensive. Rather, it is meant to provide an illustration of the sort of issues that might be highlighted when we address the issue of time in the CA:

#### 1. The process aspect

One of the most important contributions of the CA is its emphasis on the processes that allow individuals to exercise their freedoms. This emphasis contrasts with utilitarianism’s reliance on consequentialism as the only way of assessing the benefits of actions and decisions. On the other hand, the CA’s emphasis on processes should not be confused with strictly following appropriate procedures, as libertarians might do (Sen, 1999: 17). Sen has suggested a number of *instrumental*

*freedoms*, such as political freedoms, economic facilities, social opportunities, transparency guarantees and protective security. These instrumental freedoms are characteristics of the intertemporal processes that provide a general background of opportunities available to individuals. This process aspect could also be seen in Sen's distinction between *culmination outcomes* (outcomes that ignore the processes of getting there) and *comprehensive outcomes* (outcomes that consider processes) (Sen, 1997 and 1999). Choices can be sensitive to the processes involved in their formulation and execution, giving rise to what Sen called *process significance* in the act of choice (1997 [2002: 158]).

The *process significance* might imply the respect to instrumental freedoms but also to how time is organised in different societies and how one evaluates the quality of life in these different places. The evaluation of processes should consider the length of time and asymmetric nature of time in which it progresses.

## 2. Reflective exercise

If capabilities are not fixed, how they evolve? How are they affected by the passage of time? It might be natural to consider that the process of expansion of capabilities might evolve a sequence of different evaluative approaches. In very poor societies, where survival is at stake, reflective exercises of valuation might prioritise well-being over agency. Differently, in affluent societies, valuational activities might give more emphasis to quality of time and leisure. Now, it seems reasonable to expect that as societies develop their capability path of becoming, they might generate different sequences of evaluation of beings, doings and becomings. Going towards more individualistic ways of framing valuational activities, it could be argued that societies are made of norms and expectations that might affect the evaluative exercise in terms of:

- ex-ante and ex-post valuation of capabilities
- short-term vs long-term perspectives in the valuation of capabilities

Kanbur (1987) has raised some of these issues related to the importance of considering the temporal dimensions of capabilities. It is worth reproducing here his quotation from Shackle's (1965) "Comment on two papers on time in economics", where he argues that (in Kanbur, 1987: 65)

I don't think it is *necessarily possible in the nature of things* for information, as it exists in the human mind (and that is its only real existence) to be perfect in the sense that anticipative and retrospective utility would be bound to be the same. Suppose I am a young man with a splendid fortune. I decide to pursue all the joys of youth; I know that in doing so I shall dissipate my

fortune, but I am the ‘prodigal son’ of our Bible story of which you may know; when middle age comes, I find myself destitute and filled with regret, regret which I *foresaw*. Two moments, two *different* dates, cannot be the same moment, cannot give to an event, an action, a situation, which objectively are one and the same events or actions, the *same meaning* for the individual. I do not think, in human terms, knowledge can be so perfect that tomorrow’s hunger can be felt today.  
[emphasis in the original]

The distinction between ex-ante and ex-post capabilities is important to clarify matters related to the role of knowledge expansion in the promotion of capabilities. We should not confine capabilities to an ex-ante view that assumes that individuals always “know what they are doing”. This would imply an over-emphasis on the role of free actions and responsibilities. But it is not only that. This distinction between ex-ante and ex-post capabilities could provide some insights into issues that are affected by uncertainty and knowledge, such as those of mobility and vulnerability. The objective aspect of capabilities can be reinforced by Maynard Keynes’ (1921) *Treatise on Probability* views of probability as a logical function of different knowledge sets.

This distinction could be used in Sen’s scheme of “rounds of refinement of functionings and capability sets”. The main issue here seems the definition of a notion of *genuine choice*. Starting from a concept of *primitive functionings* we would then move to a broader analysis of functionings, incorporating the choices exercised (Sen, 1985b: 202). We would then arrive at *refined functionings*, after a process of choice and reflection.

### 3. Cumulative effects

Capabilities don’t need to be taken as fixed. Because individuals seem to be adaptive beings, their agency is constantly evolving towards adaptation to forms of freedom and unfreedom. This is at the core of the problem of adaptive preferences. As argued by Sen (1985a: 15),

The destitute thrown into beggary, the vulnerable landless labourer precariously surviving at the edge of subsistence, the over-worked domestic servant working round the clock, the subdued and subjugated housewife reconciled to her role and her fate, all tend to come to terms with their respective predicaments.

Time seems to be an important element to be taken into account for the evaluation of the individuals’ erosion of agency. For instance, short-term unemployment might affect people’s well-being but not their initiative and confidence. On the other hand, long-term unemployment might be “also a source of far-reaching debilitating effects on individual freedom, initiative, and skills” (Sen,

1999: 21) leading to other cumulative psychological losses. Whereas this distinction between short-term and long-term unemployment was not present in the original Senian argument, it could be useful here to illustrate the temporal impact of unemployment on the erosion of capabilities.

### **The Dynamics of Change**

One of the major challenges to be met by the CA concerns its ‘usability’ as an approach. That is, it should be practical in the sense of being usable for evaluative assessments, as Sen reminds us in his discussion on the standard of living (1987: 20). Sen and Nussbaum have further extended the notion of usability in the capability approach. Whereas Nussbaum (1999, 2000) has elaborated the notion of lists of basic capabilities, Sen has put forward the argument that (1999: 81) “The capability perspective can be used in rather distinct ways”, including three alternative practical approaches that he suggests, that are, the ‘direct approach’, ‘the supplementary approach’ and ‘the indirect approach’. As Sen has argued (p. 84-85),

Each of these approaches has contingent merit that may vary depending on the nature of the exercise, the availability of information, and the urgency of the decisions that have to be taken. Since the capability perspective is sometimes interpreted in terribly exacting terms (total comparisons under the direct approach), it is important to emphasize the catholicity that the approach has. The foundational affirmation of the importance of capabilities can go with various strategies of actual evaluation involving practical compromises. The pragmatic nature of practical reason demands this.

What these approaches seem to have in common is a methodological assumption that *change* can be captured by a simple comparison between states that are not always time-related. More often than not, this strategy is translated into comparing relative numbers and checking whether they have satisfactorily evolved without paying attention to an evaluation of these numbers in terms of their i) meaningfulness and ii) evolving path. From a time-series perspective one would positively assess the change that happened in the female illiteracy in India (% age 15 and above) only because it was 56.5 in 1998 and it is now 52.7 in 2002. Similarly, we could consider the reduction in income-poverty (% people living with less than a minimum wage) in Brazil from 43.82% in 1990 to 33.6% in 2001 without paying attention to the meaning and path of these figures. Now, the question that remains to be answered is whether these changes have been enough to produce a modification in the



previous identity of the people as illiterate and poor. By that we mean not only a statistical change, but a change in the structure of the state in which the people find themselves.

It might be useful to use the distinction put forward by Stickland (1998) between orders of change. He examines Levy's (1986) (in Stickland, 1998) distinction between *First Order and Second Order Change*. According to him (1998: 49), "First Order change is characterised as a slow and incremental process that does not challenge the organisation's core structures. Conversely, Second Order change is typically radical, multidimensional and revolutionary in nature, altering fundamentally the organisation's world view and design". When these considerations are applied to poverty reduction programmes, they might suggest that there are some sorts of change that might alter the status of the poor without changing their fundamental condition. We could then end up using statistical resources that are employed to give a false sensation that the problem is being solved, when the qualitative change that is aimed is not properly assessed by that sort of measures. It could be argued that the process of capability expansion resembles closely the notion of second order change, but this is a characteristic to be empirically verified. Changes in the poverty status of the poor have to be designed to change their identity of poor. If those changes are simply documenting the passage of time, without questioning what happens to their sense of identity and their perception of their identity, they are simply first-order changes.

But change does not happen without context. Not only many levels of analyses are interdependent, but interdependence changes over time. Not only change context shapes action but it is also shaped by action (Coleman, 1998). Moreover, change might be multilevel and non-linear. Yet, it must be noted that change has been usually characterised by a simplistic, one-dimensional and discontinuous first-order process, without addressing the issue of the fundamental choices and deep structures responsible for second-order changes. This conventional view of change is intrinsically deterministic in nature, not fully compatible with choice and autonomy of individuals. Change happens as if occurring in a straight line, measuring merely the consequences of the passage of time.

It seems that most statistics are objective measure of variables that can be considered in a scientific manner. One might wonder whether they don't miss the plural aspects involved in the human dimension of change. Why should change be something sequential, manifesting itself uniquely in a one dimensional stream? Change can be compatible with deeper levels that remain unrecognised. Nevertheless, the most popular attributes of change, according to Glick et al (1990), are:

1. type of change: intentional or not
2. impetus for the change: whether change was proactive or reactive
3. distinction between ongoing processes from discrete change events
4. the relative importance of changes

In this representative scheme there are difficulties in representing change as a continuous flux of transformation, emphasising the multi-causation and non-linear nature of change. Therefore, there is no necessity in a view of change as a discontinuous process, captured by direct empirical observation and comparison of variables over time. We might wish to consider a view of qualitative transformations where fundamental choices shape second-order transformations. Change can be seen not simply as mere mobility and motion originated from external forces but as a qualitative transformation motivated by free will and agency. One of the issues to be addressed concerns the different speeds across different dimensions of human well-being that are affected at different levels of analysis.

Change should also satisfy some basic conditions, such as being able to account for both change and stability, explaining the inter-links between different levels of hierarchies or aggregation, and describing the interaction between internal and external factors. This might affect the use of quantitative vs qualitative information. Since quantitative data tend to produce more a pattern emerging from the comparison of static differences, this could be complemented by the use of qualitative data that emphasises change as multilevel causality over time. Characteristics, as the degree of simultaneity among multiple processes could be used to assess the speed and path of changes. The mapping of change should not be restricted to a static documentation of variables according to the passage of time.

Rather, the mapping of change should reflect a modification in the deep structure that affects changes in the identity and insertion of the individuals. This would avoid the problem of change when it is not change. Change would count only when accompanied of a critical transformation of states. Three basic categories could be used to classify attributes of change (see Stickland, 1998: 123):

1. sequential vs parallel changes
2. continuous vs discontinuous
3. reversible vs irreversible changes

Another important notion is the notion of feedback mechanism, where the impact of change is assessed according to a dynamic sequence describing the reaction to an initial change. This would be crucial to define the stability or instability of the capability path of a certain individual. Priority is given to the mechanics of change itself. In what follows, we explore some of these concepts in the investigation of evolving tools and capability dynamics.

### **Evolutionary Tools and Sustainable Development**

Tools developed within traditional methodologies by scientists of developed countries have sometimes proved to be difficult to implement by policy-makers and other actors in developing countries. These tools often i) don't respect multi-scale impacts (e.g., temporal, spatial, administrative scales) and ii) don't address issues of dynamics of interaction. Yet, these contexts matter and distortions in the applications of tools contribute to the lack of effectiveness of implementation of policies designed to poverty reduction and ecosystems management.

Most importantly, these traditional methodologies undermine the basis of efficient capacity building strategies by not respecting elements of a) ownership of policies by different actors, b) participation, c) distributive impact of policies and d) context dependent institutional constraints. As a result, those traditional methodologies end up not empowering actors in poor developing countries. Methodologies should respect the users' autonomy and choice rather than impose an optimal solution. By focusing on these aspects, a new concept of indicators should emerge.

The concept of indicators explored here, named *Evolving Tools*, follows from the use of the emphasis given by the capability approach to elements of agency and choice, associated with previous considerations related to second-order change. Among its main characteristics, it could be mentioned that evolving tools:

- i) provide a starting point for different actors to assess their actions a sequential process;
- ii) can easily be adapted to different temporal and spatial scales by users;
- iii) are based on a multidimensional well-being and poverty analyses;

It must be noted that the concept of evolving tools aims to support the capability approach's argument for seeing people not as mere passive agents of development but as active partners, searching for solutions and further extension of their capabilities.

Those indicators highlight agency aspects in the constitution of well-being. As such, they emphasise the importance of “processes” in the definition of “outcomes”. By doing so, they are coherent with Sen’s (1985a, 1985b) argument that the definition of a capability should not be imposed on individuals but should represent explicit assessment exercises preferably achieved through public participation.

Quite often, well-being and sustainability indicators are arbitrarily chosen by technicians or politicians without being part of any process of consultation. The act of choosing indicators should be seen as part of a political process rather than something defined technically a priori. Indicators are not value free elements: they should represent the values of the societies where they serve as guidelines for policy-making. They should be a way of articulating one’s world-view rather than an imposition of a particular world-view.

As pointed out by Levett (1998: 298), achieving sustainable development must be about reconciling its different dimensions rather than trading one against each other. He then proposes the adoption of a ‘Russian doll model’ of sustainability to replace the conventional “Three-Ring Circus model”. As a result, as he has put it (1998: 301), “excluding the economy as an *end* makes the indicators model better able to understand and manage it as a *means*, by showing how any proposed economic instruments –taxes, charges, subsidies and so on- would affect the integration of environmental limits and quality-of-life components, undistracted by spurious or questionable economic proxies for these”.

It follows that evolving indicators for poverty reduction and ecosystem management could focus on the idea of *reconciling* these different dimensions rather than trading them against each other. Indicators are primarily formulated not as a way of description of a static reality but as a means of understanding the dynamics of change of a reality. But change does not happen without context. Not only many levels of analyses are interdependent, but interdependence changes over time.

Thus, what to do? The first step might consist in putting change into perspective or context, exploring the links between the particular features of a situation and the pro-active elements of change. Secondly, change should be distinguished between first and second orders. Thirdly, change should focus on processes rather than simply on outcomes. Fourthly, change should be conceptualised as multilevel causality over time. Fifthly, change should be seen within a ‘historical

metric', incorporating irreversibilities. By doing so, we might be able to build indicators that are driven by internal influences, like choice and capacity building.

Following Duraiappah (1998), an analysis of the links between capabilities and ecosystem-services might benefit from an analytical structure that explores the possible relationships in the poverty-environmental degradation nexus. This structure could provide a starting point for understanding choice and decision-making processes. Markandya (2000) provides an interesting analysis of the poverty-environmental degradation from the perspective of the dynamics of institutional change.

The goal of sustainability and expansion of human capabilities can reflect, as argued by Anand and Sen (2000), a universalist demand for distributional equity in a broad sense. It follows that an emphasis on capabilities as the informational space used to assess human well-being involves the use of distributional parameters as indicators rather than simply averages. Moreover, it comprises the formulation of indicators about *ends* instead of concentrating on the description of *means*.

For instance, for assessing the dynamic links between capabilities and ecosystem-services many alternatives are in course in the literature:

- ? use of lists of human ends (see Alkire, 2002)
- ? use of value chain analysis (see Kaplinsky and Morris, 2002)
- ? use of poverty mapping methods (see Davis, 2002)
- ? use of intergenerational poverty transmissions and life-course analysis (see Harper, Marcus and Moore, 2003)

These alternatives can be used and complemented by the use of *evolving tools for capacity building*, following the characteristics described above. They cannot be defined a priori but could be part of a methodology that tries to characterise the evolution of capability paths as a dynamic way of reflecting the evolution of people's evaluative exercises. Some practical examples will be explored during the presentation of the paper at the conference.

## **Conclusion**

This paper consists of a very preliminary version of a larger study that tries to explore the time-related aspects of capability assessments. A revised version will be presented at the conference

where issues of chronic poverty, old age poverty (and the problem of dependence), economic mobility and poverty dynamics, childhood poverty and transient poverty will be explored by using some concepts developed in this paper. Here, we tried to justify the reasons for this concern with capability dynamics.

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