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ABSTRACT

In order to build a future world society characterized by "peace with nature" and sustainable development, it is necessary to introduce new policies, partly involving changes in lifestyle among the general public. In order to win acceptance for such changes, what is needed is a "differentiated problem awareness" and an "adequate readiness for action." This report discusses: (1) some psychological starting points (focusing especially on conceptions of the future); (2) central goal areas to plan for in educational planning dealing with this type of preparedness for the future; and (3) various approaches that may be used in the classroom in order to work towards the goals outlined. (Ten figures and one table are included. Contains 13 references.) (Author)

CONCEPTIONS OF THE FUTURE AND EDUCATION FOR RESPONSIBILITY

Åke Bjerstedt

In order to build a future world society characterized by "peace with nature" and sustainable development, we have to introduce new policies, partly involving changes in life styles in the general public. In order to win acceptance for such changes, we need a "differentiated problem awareness" and an "adequate readiness for action". This report discusses (a) some psychological starting points (focusing especially on conceptions of the future), (b) central goal areas to plan for in educational programs dealing with this type of preparedness for the future, and (c) various approaches that may be used in the classroom in order to work towards the goals outlined.

Keywords: Conceptions of the future, critical thinking, decision making, desirable futures, ecology, education, empowerment, futurology, global approach, problem awareness, psychology, readiness for action, self-concept, world citizen responsibility.

CONTENTS

When discussing future threats and various paths to a sustainable development, one important starting point should be that changed policies need to be based on human decisions. Human decisions, in turn, are very much dependent on the conceptions people have about the future and about our possibilities of shaping the future. These conceptions of "realities" and "possibilities" may be targets for more systematic educational efforts than has been the case so far. In the discussions around paths to a sustainable development, I think that psychological and educational perspectives have often been given too little emphasis.

Against this general background, various aspects of conceptions of the future and some educational challenges and possibilities will be discussed here.

1. The Individual's Conceptions of the Future: Variations in Frequency

Among the many terms used when discussing the future there are words like "future research" and "future studies". By definition, the future is what has not yet happened, something that does not yet exist. How, then, can you do research on, or study and teach something that doesn't exist?

That which more palpably does exist, however, is our individual conceptions of the future, and our intentions concerning the future. It could be expressed like this: "The future" can be viewed as, among other things, a series of psychological phenomena in the present. Even if these conceptions and intentions can be quite difficult to define exactly, and to document, they constitute a significant part of our world of experiences. If we try the intellectual experiment of erasing from our thinking and from our experience everything that has any connection forward in time (all our plans, intentions, goal conceptions, hopes, fears, etc.), the result will be a very "unnatural" and watered-down "present". Hence, the future is an important part of the individual's world of experience, of his psychological life space.

On the other hand, the individual, future-oriented complexes of conceptions are extremely variable. For one thing, they vary from one time to another for one and the same individual – in size, for example. We could define this element of size, or compass, in various ways, but for the moment let us simply say that we have many conceptions of the future in some contexts, significantly fewer in others (the *momentary compass* changes).

For a particular individual, we can speak both of this changing momentary compass and of an *habitual compass* (the degree of preoccupation

with conceptions of the future that more generally and usually characterize the person in question) and of a *maximal compass* (the compass which the person maximally achieves, or can achieve). It is difficult to define these concepts unequivocally. Yet it is obvious that individuals differ greatly in these respects (see Figure 1). Some people have a quite restricted habitual and maximal compass (i.e. they normally think comparatively little about questions concerning the future and have certain difficulties doing so). Others have a significantly more comprehensive habitual and maximal compass (i.e. they normally think quite a lot about plans and goals in the future, and find it rather easy to talk about conceptions of the future).

We researchers obviously have no direct access to a person's psychological life space. What we can do is to use interviews, questionnaires, essays, tests or "spontaneous documents" to try to capture "on the spot" accounts of conceptions about the future. What we are then dealing with can be called a *documented compass* (or operational compass). As far as a particular individual is concerned, it may often be difficult to know whether the documented compass can be viewed as corresponding to the person's habitual compass, or whether it should be considered a momentary compass which deviates more or less strongly from the usual. On the other hand, when it comes to characterizing and comparing groups of individuals (e.g. younger and older youths, or youths from different social groups), it should be somewhat easier to draw some conclusions about characteristic features. We may then proceed from a kind of "documented average compass".

2. The Individual's Conceptions of the Future: Variations in Emotional Charging, in Temporal and Spatial Distribution, in Experiences of Ability to Influence, and in Self-Concept

Conceptions of the future within "compasses" can, of course, in turn have many different characteristics, also varying from time to time and from person to person. I will not go into a detailed analysis of these, but offer some examples of four types of characteristics that often vary.

For the moment, let us call an individual's distinct conceptions in connection with the future *futuremes* (a term sometimes used in future studies). Such conceptions may have very different *emotional charging*: for the individual, it may be a question of something negative, neutral or positive. People with habitual compasses of similar size may vary greatly

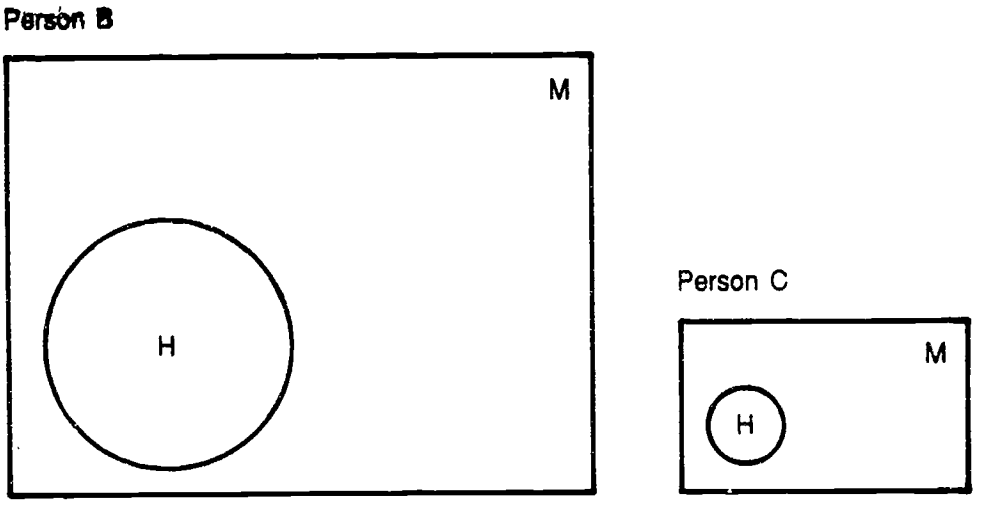

Figure 1. Diagrammatic sketch of variation between individuals regarding the frequency of conceptions of the future. Variations between person B and person C in terms of habitual (H) and maximal (M) compass.

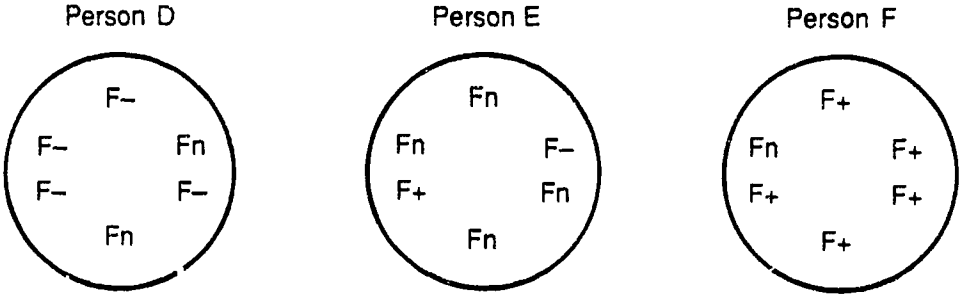

Figure 2. Diagrammatic sketch of variations among individuals regarding the "emotional charging" of conceptions of the future (F+ = positive conception, Fn = neutral conception, F- = negative conception).

on the matter of emotional charging of the futuremes included in that compass (see Figure 2). Among some people, negative mental propensities dominate (see person D), while among others the futuremes are mostly neutral, and for still others, mainly positive (see person F). In various contexts, the terms "optimism" and "pessimism" have been used in different ways. One should, however, be able to characterize a person with predominantly negative emotionally charged futuremes in his habitual conceptual compass, for example, as a pessimist.

Another varying characteristic is the distribution of the individual's futuremes on a *time and space spectrum* (see Figure 3). Some people, like person G in the figure, tend to think predominantly about what is closest in time and space, whereas others, like person H, predominantly tend to entertain a broader spectrum.

A third type of variation which is interesting in this connection is the individual's *experience of being able* (or unable) *to influence* specific future conditions. We could speak of the reference of conceptions to conditions that are experienced as "easy to influence" (F_{ei}), "somewhat influenceable" (F_{si}) and "hard to influence" (F_{hi}). A person with many F_{ei} in his conceptual world (like person I in Figure 4) perceives the future as more manageable and feels able to exert a certain amount of control, while a person with a strong strain of F_{hi} (like person K) tends to perceive the future as immalleable and feels he has very few degrees of freedom.

Finally, a fourth type of variation involves conceptions of *one's own self as an actor in the future* ("ego futuremes"). The future-related self-concept may of course vary in several different respects. Among other important considerations here is the emotional charging (whether one regards oneself positively, neutrally or negatively when considering how one will act in the future), and also whether one views oneself as active or passive. Some people (like person L in Figure 5) have a future-related self-concept that is predominantly characterized by both positive and active conceptions, while others (like person N) have more negative and more passive images.

Oddly enough, these different psychological states have been very little investigated (see, however, e.g. Cottle, 1976 and Trommsdorff et al., 1978). At the Malmö School of Education we have for some time been interested in mapping out the content and character of the conceptions of the future among children and adolescents (e.g. Ankarstrand-Lindström, 1984 and Bjurwill, 1986).

From an educational point of view, two conditions are of particular

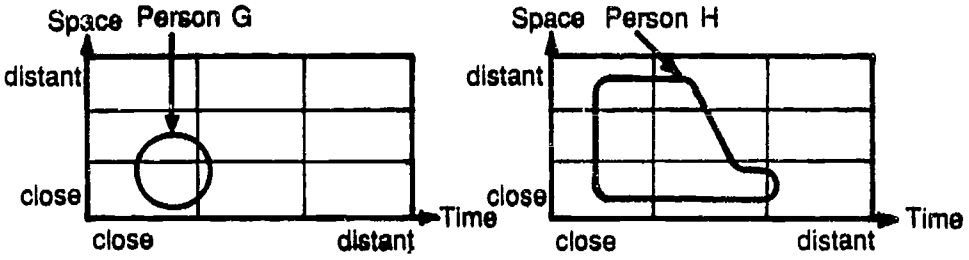

Figure 3. Diagrammatic sketch of variations between individuals regarding the distribution of conceptions of the future in time and space.

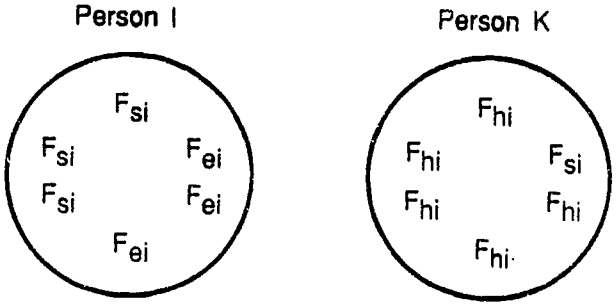

Figure 4. Diagrammatic sketch of variations among individuals regarding the reference of conceptions to conditions perceived as "easy to influence" (F_{ei}), "somewhat influenceable" (F_{si}) and "hard to influence" (F_{hi}).

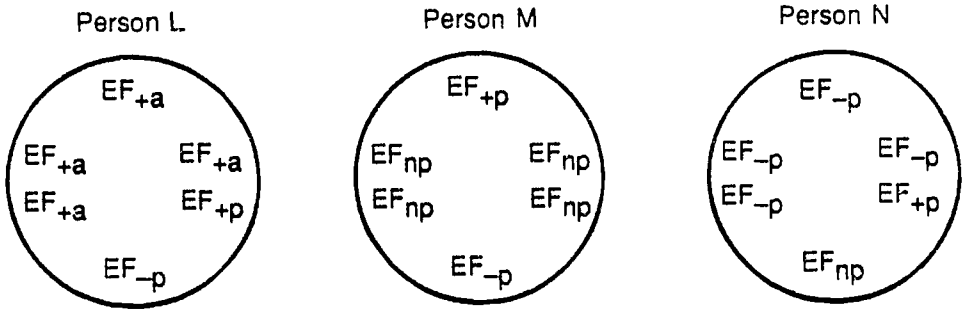

Figure 5. Diagrammatic sketch of variations among individuals regarding conceptions of oneself as an actor in the future (EF = "ego futureme"): Whether they are positively (+), neutrally (n) or negatively (-) colored, and whether they express activity (a) or passivity (p).

interest:

- What role can the school play in developing a person's future-related conceptual field?
- Is it possible to point to any features in a future-related conceptual field that are more "desirable" than others?

My own basic attitude is that the work of the school includes, both directly (through conscious teaching) and indirectly (through its way of functioning generally – what is sometimes referred to as the "hidden curriculum"), a constant contribution to the "development of conceptions of the future". To the extent that this conceptual development results in an individual who regards the future as "immalleable", and to such conceptions about one's self in the future as are stamped by negative emotional charging and passivity, then I for one regard it as unsatisfactory, from the viewpoints of both the individual and the society.

3. Individual Conceptions of the Future as Compared with Individual Conceptions of the Present and the Past

We usually regard the past as given "facts" and the present as something we can "directly observe", while the future is something we actually know nothing about. Perhaps we are thus disposed to drawing two conclusions about the individual's conceptual world: Mustn't it be both much richer and much more exact, with regard to the past and the present, than with regard to the future?

In this connection, let us introduce two terms by analogy with the term futureme (a conception with reference to the future): *facteme* (a conception connected to the past) and *presenteme* (a conception connected to the present). Are the factemes and presentemes normally much more frequently concentrated on than the futuremes? And are our factemes and presentemes normally much more accurate than our futuremes?

If we restrict ourselves to the conceptions of the particular individual, a somewhat closer reflection should easily show that the conceptions of the past and the present often need not be particularly rich or accurate. Here again there is reason to assume great variations, both between individuals and between various points in time for an individual. But if we begin by thinking about the conceptions of the past, then the momentary compass and the habitual compass (what we have conceptions about at a particular moment, and what we commonly have conceptions about) should involve a

rather small part of the past. The maximal compass is, of course, considerably larger, and it is reasonable to assume that the difference between the habitual compass and the maximal compass is greater with regard to the past than with regard to the future. Of course, throughout our lives, in our studies and through the influence of information, we have accumulated many conceptions about what has happened in our country and in other countries, and when we really settle down to think about such things, we have a stock of factemes to dip into. But it should simultaneously be emphasized that this stock is very unreliable; there are not only great gaps, but also many stereotypes, distortions and outright errors. A history teacher or researcher naturally has a significantly broader and more accurate maximal compass for the past, but nevertheless he will have a number of shortcomings in relation to "all that can theoretically be known".

If, on the other hand, we reflect a bit on our conceptions about the present, we begin by coming up against the obvious difficulty of unequivocally defining the range of the present. One should be able to regard the present as a constantly moving median line on the field of our conceptions. What is our present at one moment will be the recent past in the next moment. And that which belongs to the near future at one moment will in the next moment be our present.

However, these immediate surroundings in the past and the future have a distinctive psychological character. An obvious example is a person's double-take reaction when someone says something like: "Sure I believe in the future, like I'm going to go to bed tonight", or "Of course things were better in the past, like breakfast this morning".

Even if the image of a point or a line seems to be the most accurate logically, it would be more psychologically appropriate to regard the present as a narrow midfield on the playing area of our conceptions, where "the now of the moment" can incorporate, or edge a bit into, the immediate surroundings in the past and the future. Probably the extent of these "extra areas" varies considerably, and it would be an interesting psychological assignment to study in greater detail how different people define the scope of the present in terms of time. I might add that there are futurologists who maintain that we "should" think in terms of a very broad "now", stretching perhaps 100 years backward and 100 years forward in time (cf. Boulding & Boulding, 1990). Even though such a definition may have a certain value as an intellectual exercise in terms of our collective planning, it is probably rather distant from the ordinary human being's perception of the present.

If we dismiss the difficulties of definition and think about the present as a

narrow midfield area for our conceptions, then it is obvious that certain types of conceptions – about our closest surroundings and our own person (our "ego presentemes") – are remarkably clear within this area, while other conceptions (about what is farther away, the situation in our country and in the world) resemble our conceptions about the past in the sense that there are marked gaps and many obscurities and errors.

The conclusion of this reasoning is that there are significant resemblances in individual conceptions of the past, of the present and of the future: they often encompass a limited area and, when they range over a large field, reveal significant gaps and uncertainties. Nor is there any great difference when the issue is verifiability: we can more easily verify or reject certain conceptions about the past and the present by consulting documents or observers at the scene, but for other conceptions such verification possibilities do not exist and will not exist. Naturally, we cannot immediately verify conceptions about the future. On the other hand, our verification possibilities will in principle become greater when we go forward in time than when we go backward.

In our figures we have thus far only presented the characteristics of some of an individual's conceptual field concerning the future. A more comprehensive picture can be studied in Figure 6, a diagrammatic sketch of an entire conceptual field. The caption provides more information about its features. Corresponding to the temporal midfield *(now)* is a spatial midfield (representing an individual's immediate surroundings, *here*). The further one moves away from *here* and *now*, the greater the increase in uncertainties in the conceptions.

As we have observed, different individuals can be expected to vary considerably in their conceptual fields. Figure 7 provides some examples of such variations. As in Figure 6, we have here a type field (by which I mean a cumulation of frequently occurring momentary fields). In Figure 7, the picture is simplified insofar as *now* is indicated only by a simple midline. On the other hand, I have introduced some simple spatial sectors: conceptions in the ego sector (affecting the individual himself and his immediate surroundings), concerning one's own country and concerning the rest of the world. Particular factemes and futuremes have not been labelled with letters; rather the size of the figure indicates the frequency of conceptions.

Hence, some basic variations are indicated. Persons P and Q both have type fields that are balanced between conceptions forward and conceptions backward (as indicated by the fields to the left and right of the midline).

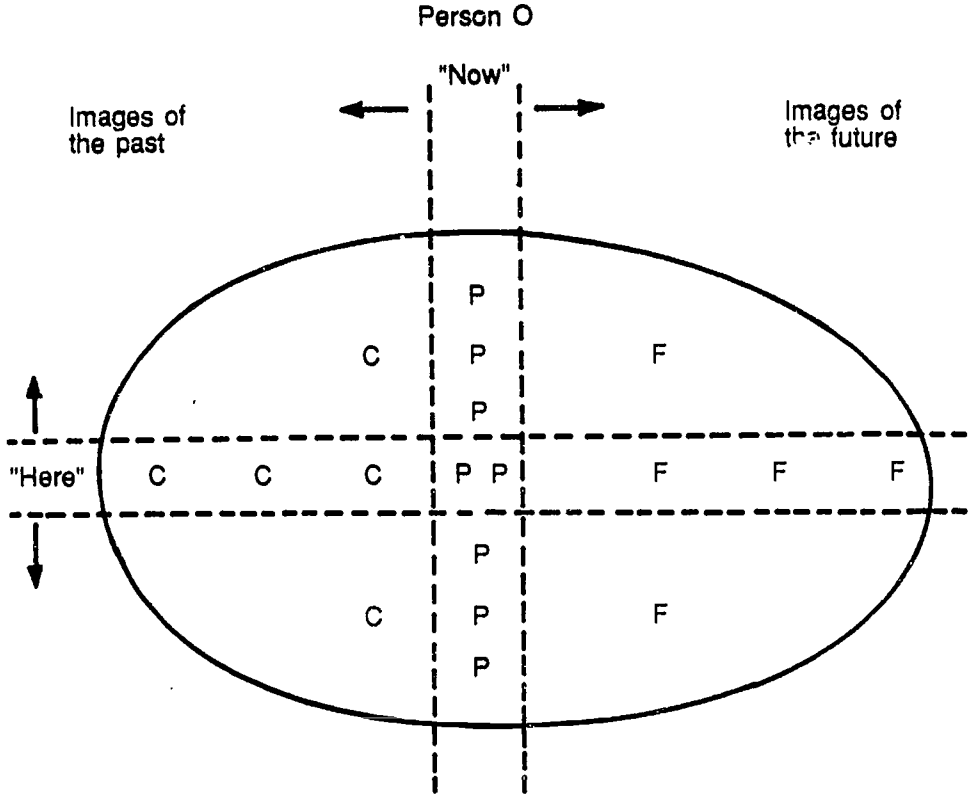

Figure 6. Diagrammatic sketch of an individual's entire conceptual field, containing conceptions of the future (F = futureme), the present (P = presenteme) and the past (C = facteme), primarily thought of as an individual's type field (a cumulation of momentary fields). The sketch reveals a certain concentration on the "now sector" and a balance between occurrences of conceptions oriented forward and backward in time. The arrows are meant to point in the direction of increased uncertainty. Corresponding to the temporal midfield ("now") is a spatial midfield (the individual's immediate surroundings, "here").

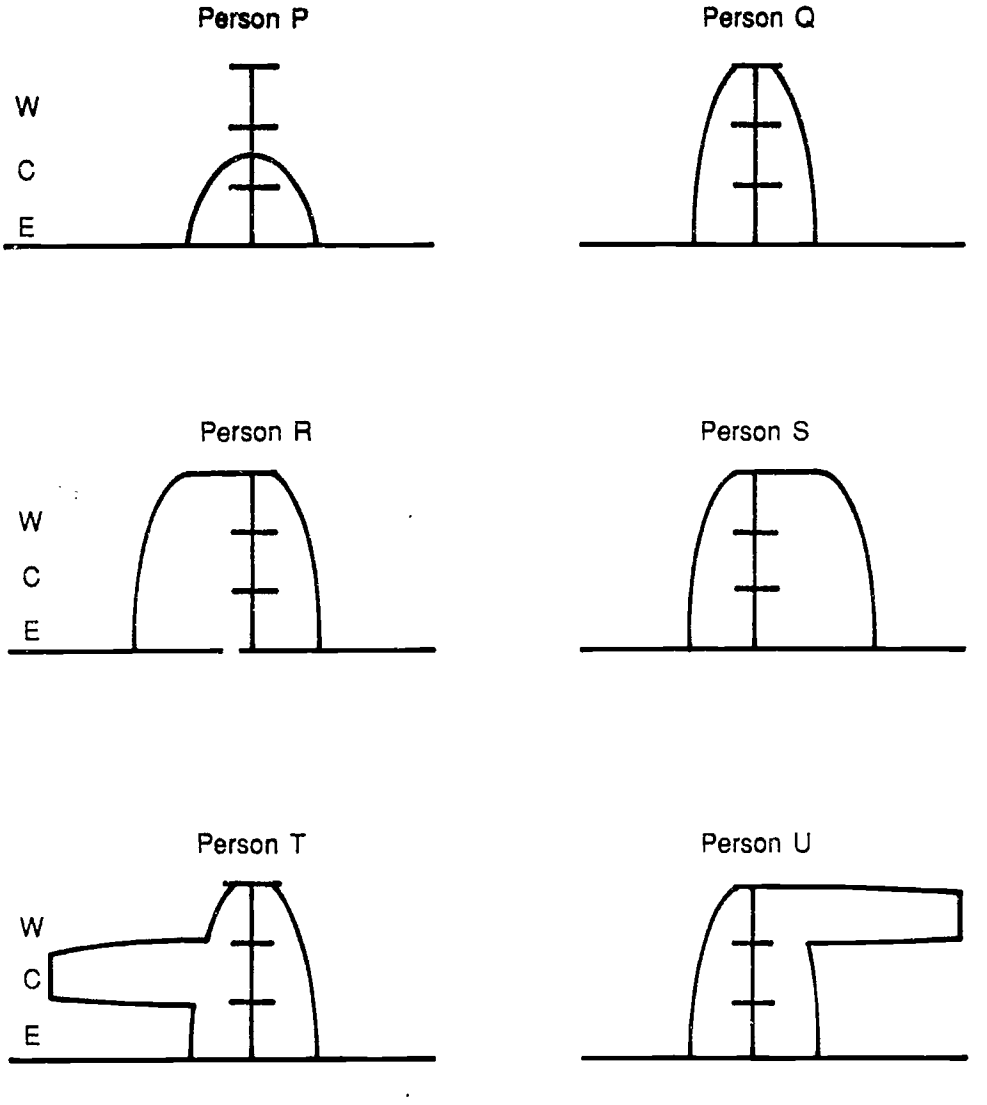

Figure 7. Diagrammatic sketch of the entire conceptual fields (type fields) for different individuals, oriented towards the balance between past time (to the left) and future time (to the right), as well as towards the frequency of conceptions in the spatial sector (E = the ego sector, the individual's immediate surroundings; C = the individual's own country; W = the rest of the world). The present ("now") has been indicated only as a midline.

Both are also quite limited in their time dimension: they don't reach very far forward or backward. The difference between them is that person Q's conceptions touch about equally on his own immediate surroundings, conditions in his own country and the state of the world, whereas person P's sphere of conceptions is more limited (primarily circling around the individual's immediate surroundings, with an element of conceptions connected with his own country).

Persons R and S have a broader temporal field, and both touch on the three spatial sectors to about the same extent. The difference between them is that person R mainly focuses his conceptions on what has been, whereas person S mainly directs his thoughts on what is to be.

The sketches of the type fields for persons T and U reveal more unusual variations. The figures suggest that person T may be a historian specializing in the history of his own country, and that person U may be a futurologist involved with global matters. In any case, it is within these special fields that these two persons have a pronounced concentration of their conceptions.

4. Collective Conceptual Fields

Earlier the term "individual type field" was employed to underscore that a series of frequently occurring momentary conceptual fields have been cumulated in a sort of average picture of the individual. This provides a more stable characterization of a particular individual's conceptual proclivities. In a similar fashion, one might imagine constructing average representations for a group of people. With that we leave the discussion of individual conceptual fields, and proceed to collective conceptual fields. One can compare different categories of people, for example boys and girls, younger and older pupils, youths from lower and higher socioeconomic groups, young people in a pre-industrial country and those in an industrial one, and so on. This implies disregarding individual variations, and trying to discover whether the category in question (as compared with some other category) has any average characteristics.

A number of such investigations have been conducted within the framework of the studies in Malmö (e.g. Ankarstrand-Lindström, 1984). Conceptions about being able to influence the future, for example, varied characteristically between different groups. Girls had less faith in this possibility than boys. Pupils in vocational courses in upper secondary school saw fewer possibilities for influence than pupils in other courses of study at this level. Pupils from higher socioeconomic categories regarded

the future as more influenceable than pupils from lower ones. Thus, girls with a lower socioeconomic background had, on average, a conceptual field resembling that of person K in Figure 4, while boys with a higher socioeconomic background had a conceptual field closer to that of person I in the same figure. Here we see what seems to be the effect of a societal "socialization in the direction of passivity" for certain groups, and I regard efforts to counteract that as being both a political and an educational mission.

In the international literature, the number of empirical studies on conceptions of the future is quite limited, but there are some (e.g. Gillespie & Allport, 1955; Ornauer, Wiberg, Siciński & Galtung, 1976).

Collective conceptual fields may also characterize entire cultures or eras (cf. Polak, 1973). It is of course a difficult task to unequivocally substantiate these empirically, but certain bases are provided by content analyses of leading articles and books of different periods. Figure 8 illustrates two contrasting collective conceptual fields which we should be able to characterize as the typical progress orientation (with positive expectations for the future) and the typical "golden age" concept (with positive conceptions particularly associated with a past era).

In the industralized countries, we have been able to discern in various ways a transition from common conceptions that we are on our way to a more positive future to a more general scepticism, or fear that the future contains risks for catastrophes and extinction. Several of our studies (using essays, interviews, questionnaires or associative tests) have shown that conceptions of a future harboring risks for catastrophe and extinction through nuclear war and global environmental destruction are unusually pronounced among young people today.

5. One of the Tasks of Futurology: Constructing Superior Conceptions of the Future

Earlier, it was pointed out that by definition, the future is that which has not yet happened, and the question was posed: "How can one actually investigate something that doesn't exist?" Now we are beginning to approach one answer to that question: What futurologists, or people engaged in analyzing the future, actually do is not to study the future per se (whatever that would mean) but rather conceptions about the future. But by and large, they are not – unless they are behavioral scientists – interested in conceptions of the future among people in general, but rather in the future concepts of the experts. In certain cases, one quite simply attempts – using

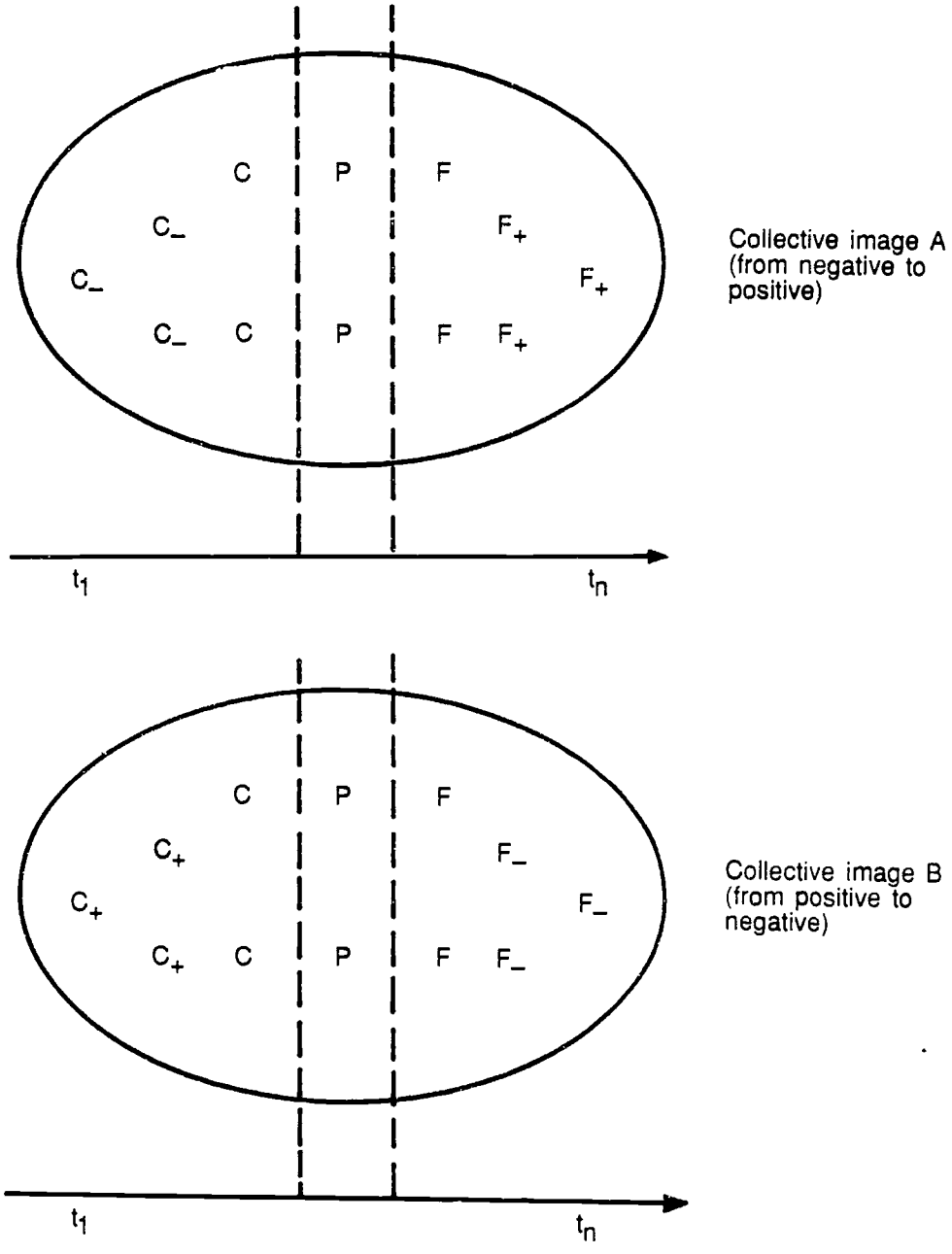

Figure 8. Diagrammatic sketch of two opposed images of change (collective conceptual fields with positive emotional charging regarding the future or the past).

more or less sophisticated techniques – to map the experts' existing conceptions of the future within their particular areas of expertise. In other cases, one tries, with the help of experts, to construct conceptions of the future.

It can thus be stated that one of the main tasks for futurology (the systematic analysis or exploration of the future) is to build, and analyze, "superior" images of the future. That implies, among other things, that images are less haphazard, more based on facts and hence more trustworthy than our everyday, individual conceptions. In order to accomplish this, futurologists have worked out a long list of techniques of a more or less sophisticated nature. This is not the place to describe and discuss these methods in detail. But I will quite briefly indicate the character of the two types of procedures named above: mapping conceptions and constructing conceptions.

One of the easiest ways to "elicit a prediction" is to visit an expert in the field and ask him (in our stereotypical conception world, of course, experts are still mainly of the "he" species) what he thinks is going to happen. We are aware, however, that it is difficult to be certain as to who the experts really are, and that even experts can be hasty in their conclusions. One common way of reducing the risks of error is to appoint a committee of experts. The idea is that individual idiosyncracies will thus be filtered out, and that the discussion among the insiders should result in greater probability of correctness because it is the most tenable ideas that survive the confrontation of experts.

Because one drawback of committees can be that prestigious people's ideas may dominate disproportionately, recourse has sometimes been taken to "expert questionnaires", where one assembles information about conceptions of the future from a number of experts without providing them the opportunity of consulting one another (this might involve the probability of various developments, imaginable consequences of different future events, etc.). Conceptions with a high frequency (where the experts prove to have a certain degree of consensus) may, in that event, possibly be viewed as a reasonable basis for a superior image of the future.

The disadvantage of this kind of questionnaire is that the experts are seldom given the opportunity to thoroughly analyze and refine their judgements, or to try them out in interaction with others. In this sense, appointing a committee can have certain advantages. This train of thought has led to various attempts to combine the possible advantages of expert committees and expert questionnaires. One of the best known, but also most

criticized, techniques for such a combination goes under the designation *Delphi Method*. It is based, in principle, on repeated expert questionnaires interleaved with opportunities for the distribution of information.

If these methods are viewed as examples of *mapping* conceptions, then *trend analyses and experimental models* are examples of attempts at *constructing* superior images of the future with the help of experts. In our analysis of the recent past, it is easy to observe patterns and regularities, conditions that recur regularly, conditions that develop linearly, etc. In many cases it is reasonable to assume, when one cannot detect any particular reason for changes, that these patterns and lines of development will continue. We quite simply extrapolate lines of development as a probable continuation into the future.

It is simultaneously quite clear that different developments do not take place independently of one another. In special studies, experts have often based their conceptions on the kind of interplay between different types of developments. Since this interplay, because of the time span and the many variables, is often complex, one can attempt to simulate developments and, with the aid of computers, for example, calculate various future results according to various given assumptions. An interesting overview and discussion of a long succession of attempts to create models for the global society's future problems – certainly no easy challenge – is provided in *Groping in the Dark: The First Decade of Global Modelling* (Meadows, Richardson & Bruckmann, 1982).

One should always underscore the hypothetical element in these constructed images of the future. That is, these constructions cannot be regarded as prophesies, but only as *conditional images: Provided* that certain basic assumptions are viable, and *provided* that no influence mechanisms in another direction are put in place, *then* we may assume a final outcome of character "C". Is there, then, any point in constructing such images when one has to admit the probability that various kinds of measures taken may disturb the picture? Definitely, *yes*. These images can be important points of departure for our policymaking, precisely because they may show where an unguided development is in the process of leading us. If it is leading in a direction we cannot accept, then we have acquired a signal that counter-measures must be put in place.

With that, we enter into another aspect of conceptions of the future: their connection with values and aspirations. Here, it may be useful to redirect out inquiry to the individual human being's more everyday conceptions of the future.

6. Probable, Desirable and Possible Futures in Individual and Collective Conceptual Fields

When, previously, I spoke about, and illustrated in figures, individual conceptions of the future, I did not include one central aspect, viz the relationship between conceptions and desires, nor did I discuss in any detail individual appraisals of the degree of probability of future events.

In fact, it is often useful to distinguish among three types of conceptions of the future: probable futures, desirable futures, and possible futures. Probable futures are no doubt those that most people immediately think of when talking about conceptions of the future, i.e. how one guesses or believes the future is going to look. Several of the comments above can be said to be concerned with different aspects of conceptions of probable futures.

But one very important aspect of individual conceptions of the future has the character of hopes, desires, or planning along the way to a hoped-for goal. So we can speak not only of conceptions of the future (futuremes) oriented towards what is probable (F_{pr}) but also of futuremes oriented towards what is desirable (F_d). The individual is able to switch between these perspectives, and thus it is possible to note greater or lesser agreement between these perspectives. We can also speak of futuremes with an orientation towards what is possible (F_{po}).

Figure 9 shows how the different types of conceptions may be portrayed. The framework for possible events is extensive, while the probable events constitute a smaller share. The desirable future events may be such that they partially fall into the framework of what is deemed possible, but partially outside. Similarly, the desirable may to some extent also be classified as probable, while another part may be possible but not probable.

In this respect, as in several others mentioned previously, we must reckon with marked individual variations, which might be symbolized by different degrees of overlapping between the different fields in figures of the type exemplified in Figure 9. More specifically, one can illustrate this by calling attention to agreement and lack of agreement between individual futuremes, as I demonstrate in Figure 10. Thus, agreement between conceptions of what is probable, on the one hand, and what is desirable, on the other, can be represented by $F_{pr} = F_d$, while lack of such agreement is symbolized by $F_{pr} \neq F_d$. But we can also imagine individual desires that do not correspond to any clear conception of what is probable. Such a case is designated $F_d/(?)$. Alternatively, $F_{pr}/(?)$ symbolizes a belief about the future which has no counterpart in any specified desire.

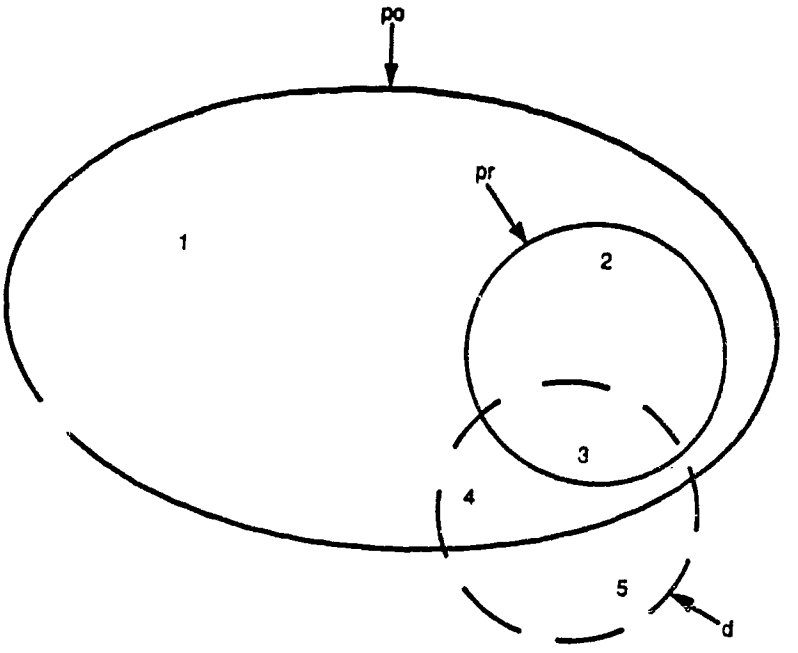

Figure 9. Diagrammatic sketch of some natural relations between conceptions of possible (po), probable (pr) and desirable (d) futures. The numbers indicate different types of conceptions in relation to these main concepts.

1) Possible future conditions that are neither probable nor desirable.
2) Probable future conditions that are not desirable.
3) Future conditions that are both probable and desirable.
4) Desirable future conditions that are possible but improbable.
5) Desirable future conditions judged to be impossible.

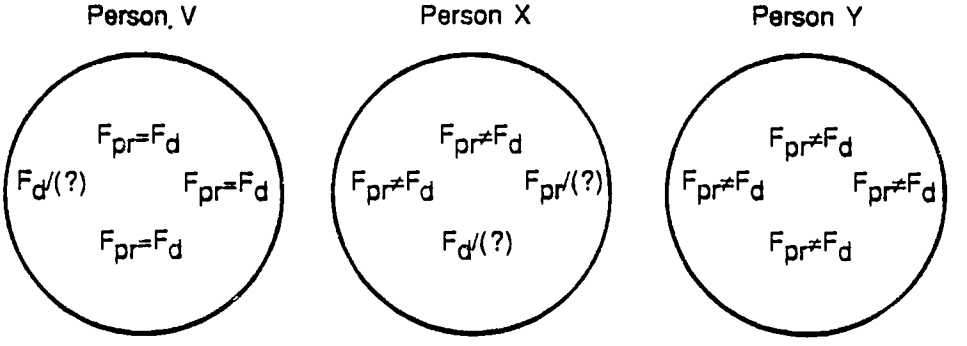

Figure 10. Diagrammatic sketch of the relations between conceptions of probable vis-à-vis desirable futures of three different people. $F_{pr} = F_d$ shows agreement between what the person believes will probably happen and what s/he desires to happen (in a specific respect). $F_{pr} \neq F_d$ indicates the lack of such agreement. (?) indicates the lack of a settled conception.

From such an analysis we can find people with relatively good agreement between what is desirable and what is regarded as probable (like person V in the figure), as well as people with pronounced lack of agreement between predictions and desires (like person Y). As noted, the word "pessimist" can be used in several different ways. One way is to use it for individuals with a lack of agreement between desires and beliefs.

Empirical investigations of beliefs and desires can be conducted using two-part essays, for example (see Bjurwill, 1986), or specific questionnaire items (see Ankarstrand-Lindström, 1984). One striking result of our studies of Swedish youths was that their picture of the desirable society digressed markedly, in many cases, from the society that they judged to be probable. Thus, with regard to a number of aspects of the future, we observed something that could almost be called a collective pessimism.

7. Constructing Superior Alternative Conceptions: One Central Task for Systematic Exploration of the Future

It is a frequently occurring but fallacious notion that futurology and analysis of the future are primarily aimed at trying to make prophesies. In fact, the assumption ought to be that prophesies or predictions, strictly defined, are normally impossible.

The statements that one makes about the future rather have the character, not of *fore*casts, but of "probability casts", "possibility casts" or "desirability casts" – i.e. statements about what is probable, possible or desirable. (These terms are not intended as working terms but rather meant as demonstrational terms to call attention to, or underscore, their difference from the prophesies we so often speak of in a routine fashion. Terms with the special character I touch on here are, however, discussed from time to time in futurological work.)

As already indicated, one important task of futurology is to construct superior conceptions of probable lines of development, for example with the help of expert opinion, trend analysis and modelling. But I would like to emphasize especially here that the construction and analysis of alternative conceptions are also important assignments for systematic exploration of the future. Hence, a fundamental question is: "What are the possible or plausible alternatives to the most probable developments?"

8. Educational Challenges and Possibilities: Some General Goal Areas

In order to build a future world society characterized by sustainable development, we need to introduce changed policies, and some of these will involve changed behavior (changes in life styles) in the general public. In order to win acceptance of such changed policies and willingness to change behavior, we need "problem awareness" and "readiness for action" among people in general and especially among young people who will often have the best possibilities for long-term action from long-time perspectives.

If we get such a young generation with relevant problem awareness and readiness for action in many countries of the world, this will also be a dynamic force to continue the work towards better solutions in cases when "traditional experts" and "traditional politicians" may be too hesitant to promote necessary changes, due for example to all too strong ties to the "established economic-military power complex" in a country (who may see some of their power and privileges threatened).

What would be some of the central goal areas to think about and plan for in educational programs dealing with this type of preparedness for the future? An attempt is made to illustrate a few potentially important ambitions in Box 1.

As you can see, we start from three psychological aspects, given as headings for three columns: Cognitive Aspects (knowledge, conceptions, cognitive skills), Value Perspectives, and forms of Readiness for Action.

In addition, we have used three content-related areas in this analysis, presented in Box 1 as headings of rows: they are tentatively and briefly labelled: "World Citizen Responsibility", "Readiness to Search Critically for Alternatives", and "Readiness for Equality and Non-Violence".

This gives us a 3 by 3 cell system or nine sub-areas that describe, in brief key expressions, some of the central goals to think about and plan for in educational programs. I will not take time here to go into any detailed analysis of the meaning of the various cells, but a few additional remarks may be in order.

One comment is that this is a very broad goal concept. Some people would mostly think of knowledge to transfer to young people: specific facts about various problems of the earth, such as deforestation, fossil fuel pollution, ozone layer depletion, or hazardous waste. Knowledge is, of course, important, but it is not enough. The general citizen cannot be a specialist in many specific problems, but he or she should have some basic insights in the character of the problems and be prepared to contribute to

their solution. Value perspectives and readiness for action as outlined in Box 1 are then very important.

Not only is this a broad goal area; it is also a very ambitious one. Some readers may ask whether it is really possible to reach all of these goals by educational means. That is something we do not know enough about, and it has to be reflected upon and researched. However, it seems reasonable to think about these expressions as formulating desirable paths to travel along; how far we can go may vary due to individual and situational conditions.

Box 1. Readiness to Work for a Global Future Characterized by Sustainable Development: A Schematic Presentation of Some Relevant Educational Goal Areas

	Cognitive Aspects	Value Perspectives	Readiness for Action
World Citizen Responsibility	Differentiated problem awareness; global perspectives; ecological perspectives	"Global ethics"	Broad field of responsibility; involvement in the development of the world society
Readiness to Search Critically for Alternatives	Ability to look critically at present developments; ability to generate alternative visions	"Shaping the future is our common task"	Readiness to develop and work for alternative visions in cooperation with others
Readiness for Equality and Non-violence	Insights into present lack of equality; insights into the instabilities and risks of violence-based solutions	Equality ideal; non-violence ethics	Readiness to work for justice and more equal distribution; ambition to work for peace and against violence-based solutions

9. Educational Challenges and Possibilities: Some Expert Opinions on Global Survival as an Educational Theme

As part of our Malmö studies we interviewed a number of experts on "peace education" in other countries. One of our questions dealt with the possibility of combining the areas of "peace education" and "environmental education" into a common theme on "global survival". The exact formulation of the question was as follows: "Sometimes the term 'global survival' is used to refer to an area dealing both with the risks of nuclear war and with the risks of far-reaching environmental damage through pollution and overuse of resources. How do you look upon dealing with these two categories of risks together in school? Do you have any suggestions as to how the teacher could approach the problem area of environmental damage?"

To illustrate the views given I will quote four of the persons interviewed (two are from the United States, two from Great Britain).

Person 1:

"Partly, I think, this depends upon the particular historical period. At the present time, it would be much easier for a teacher in schools in Britain to deal with the problems of environmental damage than it would be to deal with the problems of the risk of a nuclear war. And this is because the media and the newspapers currently are very concerned and focused on the problems in the environment. At the present time the problems of a nuclear war are just not featured in the media – it's no longer a problem in the eyes of the media. Therefore, when children go home and see the television and the newspapers, they are getting environmental messages loud and clear, and therefore at the present time, I think it would be very easy to deal with that.

But linking it with nuclear war should also be done as part of the educational process, through such things as the consequences of what would happen with a nuclear war. The students should be aware of the environmental changes, climatic changes, the nuclear winter notion and soforth. They also need to deal with the idea of human beings and their relationship to nature and the ethical questions related to this, such as whether it is defensible to threathen to destroy millions of animals as well as using nuclear weapons. ...

In the past, in all the peace studies courses I have taught, I have always included both the nuclear issue and the environmental issue. I have been doing that for at least 20 years now, and it's essential because both of them

have to do with quality of life and both affect the number of people who die on the planet. The number of people from the Third World who are starving to death is appalling, and this is an environmental problem, it's a food problem, and a distribution problem, but it's also a problem of the way we organize society, so the interdependence of peace and environmental issue is nothing new, as most of us know who work in this field, and it will continue to be included in peace study courses. Many of the peace studies courses now include the global issues and obviously have to deal with global survival. Major questions are: What do we do in order for this planet to survive, and how do we develop environments in which human beings can live good, valuable, meaningful lives? Peace is not just about the absence of nuclear war as we know. This is how I always have dealt with these questions and I will continue to do so."

Person 2:
"Yes, I think it is very relevant to deal with these areas together. There are problems that everyone has to face – some of them have to deal with the threat of war, some of them with damage to the environment, and they both involve our ability to survive on this planet. In addition, if environmental issues are to be dealt with in any constructive way, people, groups, nations are going to have to learn how to collaborate effectively, and they are going to have to learn how to deal with important conflicts of interest. We need constructive resolutions of those conflicts rather than use of force or other destructive means.

A good deal of my own research in the area of conflict resolution started off with the prisoner's dilemma game, which is very relevant to these problems. Individuals feel they have more to gain by polluting than by trying to prevent pollution, but when everybody has that attitude we destroy the common good. When you deal with those kinds of dilemmas you need to develop the orientations that lead to cooperation and mutual problem solving rather than attempts to gain a particularly advantage for self."

Person 3:
"I think it's helpful to deal with them together, discussing planetary help, planetary well-being and planetary survival. I think the danger of dealing with them together is that, unless you have an awful lot of time, you might end up being superficial about both of them, and I worry about superficiality.

In one sense, I think that approaching the environmental damage is the easiest task that any teacher has ever been given, because it easily includes empowerment for all of us. When we were trying to stimulate action when dealing with nuclear weapons, the students could write letters and relate to it, but these actions usually had no effects. When dealing with the environment, on the other hand, there are a million meaningful things everyone can do – it's wonderful, it's terrific, it's fabulous for young people of every age. There are things that make sense for a first grader, and yet there are things that could be dealt with among the older ones. Usually it isn't very controversial.

I think, though, that as you proceed, you get into more complexity: Who else is damaging the environment besides me or us? Then you get to the Brazilians and their rain forests and the fact that they are saying: Wait a minute, you know, you North Americans expanded and you cut your trees all down. Now you are coming down and telling us 'Don't do that'. You have already done it: you only have a couple of trees left in Oregon and in Washington, and you have raised your standard of living by doing so. What do you mean; we can't cut our own trees? So as we proceed, we come to more controversial issues."

Person 4:

"I think those are both very important fields of study and should be treated in every classroom in the world. The Gulf War with this burning of oil was one reminder of the link between war and environmental threat. I think this Gulf War has highlighted that future wars just have to be avoided because of that. An advanced industrial planet cannot accept that kind of devastation.

My discussions with David Hicks have made it very clear to me that it's not a suitable strategy in the classroom context to use fear. I think maybe in the early 80s peace education used the motivation of fear too much. It's not appropriate to focus on pictures of the horrors of nuclear war. Yes, it's there in the background and if students want to find out, then use the material. But I think much more important is to stress the positive strategies, to create visions of alternative futures to think through. Global survival is in itself too negative a term for me. We should be affirming life's wonders and possibilities more instead. I think that this empowers students, and education should be about empowerment. They are going to get enough of the negative aspects on their TV screens, from their comics and from the news in general. What I am trying to do at the university

instead of focusing on environmental damage, pollution etc. is thinking through alternative technologies: maybe we don't need to use so much energy etc.

Do I have any suggestions as to how the teacher can approach this area? Yes, by going straight to the task of finding solutions. Kids are clever people and they all know the problems; but get their minds working creatively! In every single class on this planet there is a genius – in a sense there is a whole class full of geniuses. As a teacher, try to unlock their own creativity! They are going to have to solve the problems of the future – they are tomorrow's inventors, scientists and engineers. They will figure out the ways, and really all you can do is guide them towards that process. Instead of filling kids with facts that they then have to master and digest and pop out in exams, you should stimulate their minds to think towards their own discoveries, their own creative work on our way to a better future."

10. Educational Challenges and Possibilities: Various Approaches in the Classroom

In this final section of the paper, let me briefly comment upon some of the various approaches that may be used in the classroom to work towards the goals outlined above. In so doing, I will benefit from some of the background facts gained through our studies of the conceptions of the future among children and young people and our interviews with educators in other countries.

(a) Where does this topic fit in within the school?

Should this problem area be dealt with in a particular course or subject? Or is it better to handle it in extracurricular activities or projects? Or should it somehow be approached by a combination of efforts from various subjects in school?

You could find advocates of all these three different possibilities. A person emphasizing the specific knowledge involved might find it natural to treat these issues in a particular course or at least within a specific subject, such as "natural science". A person finding it important to involve and train the students in personal actions (thinking globally, acting locally) would perhaps find it easiest to handle these efforts in extracurricular projects. A person contemplating the very broad goal areas involved (as illustrated in Box 1 above), including value perspectives, might draw the conclusion that such broad ambitions cannot easily be handled within a particular course or subject, but must be dealt with more or less in all subjects at school or at

least via a combination of efforts involving several subjects. Personally, I tend to favor the last-mentioned approach or some kind of combination of all three approaches. Obviously, such multi-subject efforts are not always easy to carry out at those grade levels where we have many different teachers. This, therefore, is an area where cooperative planning seems important.

(b) "Alarm" versus "empowerment"

We mentioned earlier that we need a "problem awareness" among people in order to get a willingness to accept changed policies, especially such changes that affect the person's own degrees of behavioral freedom. Against this background it may seem tempting to focus strongly on the many severe global threats that we need to come to grips with, using these as an *"alarm clock"* to gain attention and interest in action. When dealing with people totally unaware of the problems, this may seem quite logical.

However, children and young people of today are usually not unaware of these threats (even though they may not have very articulate ideas of the character of the threats). On the contrary, our studies of the conceptions among school students at different age levels indicate (as do several other studies) that such threats have a very predominant place in many children's and young people's thoughts about the future. These youngsters often have a very pessimistic view of the future, thinking about a world that may not survive, mentioning both the risks of a nuclear war (perhaps started by accident) and the many environmental hazards. This dark view of the future of the world is often combined with feelings of despair and passivity: not only is the future at risk, but there is nothing we can do about it.

In this situation the "alarm" perspective may not be the best one to use in school, and it may even – if used in a psychologically less adequate way – strengthen the tendencies to passivity and despair. This does not mean that the problems should be denied or concealed; on the contrary, they should be handled step by step in various ways. But an important goal that has to be at the top of the teacher's list of priorities is *"empowerment"* of the children. From the very start of the discussion, there should be a focus on various solution possibilities and on the students' own contributions.

With this approach, the "undifferentiated problem feeling" combined with feelings of passivity and despair should hopefully be replaced, step by step, by a *"differentiated problem awareness"* combined with a *willingness to take part* in the important job of preparing for a better future, emphasizing the process of solutions more than the problems. (Cf. the

interview answer of Person 4 above.)

(c) Future-oriented reading for information and information processing

Reading for information is often the first thing a teacher thinks about as an educational tool, and within the present topic there is now an increasing wealth of literature available. There are a number of useful overviews of various resource problems (such as World resources 1990-91) as well as aids in helping a teacher find reading materials in different problem areas (such as The new global resource-book, 1990). Some surveys of problems and possible solutions are directed to the general public (such as Corson, 1990); and there are attempts to show how these issues can be treated in the classroom (such as Brown et al., 1991). But on the whole, much of the available literature is oriented towards specialists, so there is a big task for experts and educators in different countries to cooperate in selecting suitable texts or adapting such texts to the preconditions among younger students. In this reading, room should also be given to debates about the future; such texts may be quite stimulating and motivating.

Of special importance is how texts of these kinds are dealt with pedagogically. It should be kept in mind that this reading and processing of the reading is a way of building conceptions about the future. Among other things, it is important to counteract conceptions about the future as extremely and unrealistically "uninfluenceable". Through his reading, the student should become aware that the future is neither predetermined, nor a random series of events. Instead the future is formed step by step via various influences, among which collective and individual decisions and actions play an important role. In addition, interdependencies and chains of consequences should be focused upon; the students should be assisted in acquiring system perspectives (global perspectives, ecological perspectives). In this work, various diagrammatic tools can be helpful, such as "futures nets" (in which chains of consequences are depicted) and "start-to-goal-diagrams" (where you illustrate alternative paths from a non-desired present situation to a desired future goal).

(d) Reading of fiction for experience: Utopias, science fiction etc.

Since futurists do not really study "the future per se", but rather (superior) conceptions about the future, the borderline between reading for information and reading fiction is not always quite sharp when we deal with publications on the future. Anyhow, both primarily informational and primarily fictional texts can be valuable in dealing in school with problems

of the future. Both fictional dystopias and fictional utopias can thus be useful eye-openers. The reader may become more aware of the many different ways you may think about the future, or ways that society can be organized.You may become less tempted to take for granted present conditions; it may be easier for you to free yourself from your ingrained image of the world. Science fiction texts, dealing with innovations in the society and the possible consequences of these innovations to people, may give excellent starting points for analysis and discussion of values, so important in deciding upon our paths to a sustainable development.

(e) Training in creative and critical thinking

The ability to think is a basic skill. There is an old saying: "Give me a fish, and I have food for the day. Teach me how to fish, and I have food for life." – It may seem a bit unfair to suggest that our schools do not try to teach our students to think. But when talking to various groups of judges of school today, it is often heard that school has tended to neglect or underemphasize this task. Too often, it is said, school presents the students with "finished thoughts" and does not train them enough to think for themselves. It can be reasonable to stress especially the importance of training three things: (a) creative problem-solving processes with emphasis on eliciting ideas; (b) creative expressions of the students' own conceptions of the future and their construction of alternative future images; (c) critical thinking (including, among other things, a critical examination of sources of information).

Item (b) seem to be of special significance here. Through the reading for information and experience we will hopefully stimulate the students' conceptions about the future, the risks of stereotypes and vagueness are reduced, and the awareness of the possibilities of shaping the future in alternative ways should become greater. It is also important, however, that the pupils themselves be given the opportunity to express their own conceptions of the future, that they can express verbally or by other means what they think, what they fear and what they desire. This will also open up the possibilities of fruitful communication about these issues, both between individual students and together in the classroom group, which may be of importance for the clarification of values and as a stimulation to r diness to act.

(f) Developing the "self-image"

Our "self-images", including our personal feelings of security or trust, are

quite important to our readiness to handle and shape the future. Nothing is easier in the world of the school – with the recurring comparisons of achievements and the constant judgements – than to discourage people, to make students feel inferior, that they have failed. It must be a very important task for a teacher (by adapting the tasks, by giving room for the student's own interests and self-governing, and by using a good dose of encouragement and praise) to get the young people to believe in themselves and their abilities. When there is such a trust, almost nothing will be impossible. When this trust is missing, very little will be accomplished. Therefore, supporting a positive self-image is basic to our helping young people become prepared for the future.

(g) Training for participation and projects

The school should try to give its students optimal possibilities to experience themselves as having co-influence and responsibility in real situations. The goal is to have students develop a desire and ability not only to meet the future, but also to contribute to its shaping. Such training must be carried out in cautious steps in order not to evoke unrealistic expectations.

Two objections are often raised when somebody talks about letting students have more influence within the school. The first deals with the situation within the school and usually approximately says that it will be quicker, more efficient when the adults decide. The other objection concerns conditions outside school and may take this form: Why should we let students get used to having a say within school, when they have so few possibilities to influence what happens in society? I will comment briefly on these "standard objections".

First, it is self-evident that a decision is often made more quickly when it is made by a person with long-term training in making decisions. But this is not very relevant here. What we want is a *training* of students to make their own decisions with responsibility. This training will not be promoted, if an adult person, however quickly he may be able to do it, makes decisions for them. Instead, in that case, the student will get constant training in being passive, in not needing to think ahead, in not having to plan, in not needing to take responsibility.

The other objection may seem a little more meaningful – if you think of the situation in many societies today. But we should remember that our students will be active within the society for quite a long time. My comment will thus be: OK, the space for action for people in general may not be very large today. But nevertheless, it is larger than the space that is usually

utilized. Many people are, in other words, more passive than they need to be. The hope is – from my point of view – *both* that the formal space for citizens to take part in decisions and actions to shape the society will increase step by step *and* that the utilization of the current available space will improve. The school is one of our tools for working for a future in which the common citizen will play a more important part. Not using this tool is – if you want to formulate it a bit solemnly – a treachery to democracy.

Participation in small projects within the local community can often be useful in various ways, dealing with environmental issues. These can be very simple tasks, but may also consist of small investigations – perhaps about how the local politicians view and work with the planning for the future as regards environmental problems. Perhaps the students can make more ambitious studies that could even be one piece of the foundation for the local planning.

If carefully planned, activities of these kinds will not only give the students better knowledge about the conditions of planning for the future, but will also lead to a feeling that what you do can have an impact. That will counteract the apathy and unwillingness to act that we know may be a frequent reaction among young people to the problems of the future.

11. Summary and Conclusions

When discussing future threats and various paths to a sustainable development, one important starting point should be that changed policies need to be based on human decisions. Human decisions, in turn, are very much dependent on the conceptions people have about the future and about our possibilities of shaping the future.

Against this general background, the present report has dealt with various aspects of conceptions of the future and with some educational challenges and possibilities.

Individual, future-oriented complexes of conceptions are extremely variable: in frequency, in emotional charging, in temporal and spatial distribution, in experiences of ability to influence etc. Several studies (using essays, interviews, questionnaries or associative tests) have shown, however, that conceptions of the future harboring risks for catastrophe and extinction via nuclear war and global environmental destruction have been pronounced among many young people.

One important task of futurology is the construct "superior conceptions" of probable lines of development. But it should be emphasized that

the construction and analysis of alternative conceptions are also important assignments for systematic exploration of the future. A fundamental question is: "What are the possible or plausible alternatives to the most probable developments?"

In order to build a future world society characterized by sustainable development, we need to introduce new policies, and some of these will involve changes in behaviour (life styles) by the general public. In order to win acceptance for such changes, we need a more differentiated "problem awareness" and an adequate "readiness for action" among people in general and especially among young people.

The report discusses some of the central goal areas to think about and plan for in educational programs dealing with this type of preparedness for the future. Nine goal areas are described, using labels like "world citizen responsibility", "readiness to search critically for alternatives", and "readiness for equality and non-violence".

The final section of the report presents and comments upon various approaches that may be used in the classroom in order to work towards the goals outlined. Among other things, ideas from interviews with educators in different countries are being used.

As one example, the report discusses "alarm" vs. "empowerment" as strategies. It has often seemed natural to focus strongly on the many severe global threats using these as an "alarm clock" to gain attention. However, children and young people are usually not unaware of these threats (even though they may not have very articulate ideas of the character of the threats). On the contrary, such threats are predominant in many children's and young people's thoughts about the future. Many of these youngsters have a very dark view of the future, often combined with feelings of despair and passivity: not only is the future at risk, but there is nothing we can do about it.

In this situation the "alarm" perspective may not be the best one to use in school. Instead, an important goal that has to be at the top of the teacher's list of priorities is "empowerment" of the students: from the very start, there should be a focus on various possibilities of solutions and on the students' own contributions. Related to this is, for example, participation in small projects within the local community.

It is very probable that the conceptions of the future among the young generation and their willingness to take part in shaping the future are of decisive importance for what our future will actually look like; both when we think of the area focused upon here, the sustainable development, and in

other respects. Against this background it seems important that many people strive to increase our knowledge in this field, for example through research and development efforts as well as through teacher-led practical experimentation in the everyday classrooms. There is a lot to be done.

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