Project:
The Landscape and Isobars of European Values in Relation to Science and New Technology (Value Isobars)

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From the EU Project: Value Isobars (www.value-isobars.eu)

First communication to the end-users*

1. Introduction

The landscape of European values is complex. We propose to introduce the concept of value "isobars", a term borrowed from meteorology to deal with this complexity. Isobars in their common weather forecast meaning are line drawn between points of common atmospheric pressures. How much do we really know about the nature of values? How could we actually chart existing values in different societies and compare them? And how could we create a constructive dialogue with societal groups about their values and be part of normative dynamics? And which legal or other instruments are available to policy makers? Is soft law a good approach? These are some of the main questions that the project Value Isobars attempts to answer.

The idea behind Value Isobars is based on a specific conception of the relation between values and science and technology. In this communication we therefore point out two specific case areas which we believe are relevant to illustrate this relation.

Over the past decades, top-down innovation policies appeare to be problematic because they decrease the societal embedding of innovations in science and technology, thereby decreasing their degree of social acceptability. It is crucial to engage the public and address public and societal values for socially robust long-term policies. A science and technology (henceforward: S&T) governance in Europe that aims to be more in line with European values needs to know which values there are, what values are and what it means to apply them in policies.

We believe that the results of this project can contribute to:

(i) drawing a blueprint for an improved and value-oriented S&T governance;
(ii) provide advice for deepening research on core questions of good S&T governance.

In brief, we state that:

- Techno-scientific developments, particularly in fields that are tagged as "frontier science", are subject to strategies of S&T policies at different levels: at the level of research institutions, funding organisations, national S&Y policy, and international cooperation and policies of supra-national bodies like the EU.
- Policy-makers have learned that all such policies are crucially dependent on their social acceptability, i.e. unless they exhibit a certain social robustness over time one risks investments that may be doomed to lead to unwanted innovations.
- While the apparent reasons for public scepticism about certain innovations and S&T developments may be varied – depending on the technology in question -, scepticism regarding novel technologies often stems from what people value and what they want to

* In the following text we freely use text extracts from the projects' working papers in WP 1 -5. We gratefully acknowledge the contributions of all our partners.

protect. Social values may thus form the ultimate ground for debates on what sustainable innovation and a good S&T development is.

- Thus, when designing our long-term S&T policies we need to take account of these social values and seek either a better harmony with them or alternatively critically confront these values in a science-society dialogue.

So far, policy makers have, we believe, very little helpful information on how to do this. This project elaborates a design of value-based governance which intends to improve the situation.

In this end-user communication we have kept references to an absolute minimum; for more detailed references cf. the deliverables of the work-packages. Specific questions to the end-users are inserted into the text and marked as such. The questions shall also accompany the communication on a separate file for providing convenient feedback.

2. Terms and definitions

In everyday parlance, the term "value" is often used as synonym to or in context with terms such as norms, institutions, principles, desires or virtues. The discussions about what these terms mean helps to sharpen our understanding of the meaning of "value". At the same time it emphasises the connections to related terms that are of importance for further discussions in the project. Therefore, we find it important to give a short general definition of terms even when there are several different views and definitions of these terms.

2.1 General terms

Norm

A norm is a more or less generalised instruction with respect to expected behaviour of defined groups of social actors or the expected performance of a specific activity. Norms can be classified as technical, epistemic, conventional, legal and moral norms. In everyday life one finds them e.g. in the form of technological standards, customs, laws and commandments. Norms are often accompanied by sanctions or rewards. One example of a norm could be "you shall not lie".

Institution

An institution can be understood as a complex set of norms that focus on a specific social issue. One example of an institution is "the university".

Governance and participation

Governance can be seen as a structure of leadership or a system of government, but also as a way to lead long-term processes which are harmonious with the stakeholders/public. Participation allows the public to voice its opinion and ideally contribute to a better decision making process. While from the administrative point of view participation might be seen as a process to build public support for specific projects, citizens might be motivated by the perspective to influence decisions.

Principle

A principle can be understood as a high substantial norm or a formal perspective to evaluate the validity of a norm. We can distinguish between content-related principles such as the Reverence for Life (Albert Schweitzer) or principles of justice or formal principles such as the Golden Rule or the Categorical Imperative (Immanuel Kant) which says you shall act only according to "a maxim whereby you can at the same time will that it should become a

universal law". A legal principle is a principle underlying the formulation of jurisprudence, and an example is the Precautionary Principle: "When human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm" (UNESCO /COMEST 2005).

Value

Originally, the concept of a value was linked to pricing something through the mechanism of exchange. When an economist observes an exchange, two important value functions are revealed: those of the buyer and seller. Just as the buyer reveals what he is willing to pay for a certain amount of a good, so too does the seller reveal what it costs him to give up the good. However, non-economic values are in general seen as points of orientation that guide and enable our action. They also provide for generating identity. The notion of "value" can broadly be characterised as a concept that governs human behavior. Values are considered subjective and vary across people and cultures. They are in general the good-making features of human evaluations. Values enable action without demanding an action and are something through which we define ourselves, while at the same time acting according to our values gives us the experience of freedom – a freedom that does not disappear even in the face of repression.

Social values

Social values can be understood as (a) socially shared (within cultures or subcultures), and (b) socially binding (i.e. endangering such values leads to outrage, sanctions and reprimand, and if violated needs restoration). People not only are concerned about rule violation if they suffer harm themselves, but they are also sensitive to value transgressions committed by others against others ('third-party-morality'). In such situations, people want others to be punished even if they do not gain anything themselves. However, agreement or consensus on values will never be complete; there is always a potential for controversy and individual (or group) variation. Finally (c), values tend to be socially acceptable 'good' reasons. An example: to say, 'it is bad to do X, but there is no special reason for this' is no acceptable form of judgment, while saying, 'it is immoral to do X because it is unfair' is. To say 'I like coffee, but there is no special reason', in contrast, is perfectly reasonable. Individual and social values might be identical, but not always necessarily so.

2.2 Different aspects of values

Below we shortly describe some terms in the relationship with values:

- **Values and virtue**

Virtues can be seen as a link between values and action. We do not only need an understanding of what is morally good or right but also an attitude to act accordingly. Examples: tolerance, integrity, etc.

- **Values and desires**

While desires only contain what individuals actually desire, values express their idea of what is worth desiring. Values enable them to evaluate their desires but they are not simply rational concepts of what is desirable and that can easily be abandoned due to objections, they also have a very strong emotional component.

- **Values and interests**

An interest can be understood as any form of concern that is directed to an object, action or opposite creature. Interest has, among other things, been used as synonymous with the value that a good has for a person or/and the pursuit of this good.

- **Values and beliefs**

When it comes to values and beliefs, the latter answer to descriptive questions about expectancies (what can happen), existence (what exists), cause (why this happened), probabilities and hypotheses. Values, on the other hand, answers to questions like 'what is good, preferable, proper, desirable'.

- **Values and ethics**

A crucial point to consider is the relationship between values and ethics. It seems that often these two terms are mixed. An important difference is that policymaking is based on values and not ethics. There is some danger that in European Commission (EC) and its S&T governance a shift to concepts of enabling and positive values is accompanied by a side-lining of ethics. The latter might be seen as a restrictive and permanent trouble-maker. As ethics amongst other things is about analysing and criticising actions and institutions with regard to their moral rightness or goodness, its judgements can indeed restrict and limit the range of possible actions.

Questions for the end-users:

- ***Do you agree with our conception of the basic problems of a good S&T policy?***
- ***Do you experience this problem description as relevant to your own work?***

3. Science and technology case areas

In this chapter we will introduce two case areas that we take to serve as test-cases for our blueprint for a value-informed approach to governance and policy making. The one is on possible dual-use issues in pathogen research, the other on biometrics technologies. The ethical assessment of both is very dependent on the values that are alive in society. They bring forwards questions such as: does one value liberty in scientific research more than safety? Do these two necessarily exclude each other? Should a risk to dual-use lead to a closed mentality in scientific research or can openness of scientific research also be a means to solve these issues?

3.1 The dual-use dilemma

A case: Australian mice

In the late 1980s, Australian researchers unintentionally developed a lethal mousepox virus. The researchers hoped that the altered virus would induce infertility in mice to combat mice pests in Australia. The altered virus unexpectedly killed both naturally resistant and vaccinated mice. Critics stated that open publication of this research might lead terrorist groups to develop new biological weapons. Malevolent parties would be able to create a smallpox variant that would be resistant to any known vaccine. In this specific case, the researchers acknowledged the dangerous nature of their research in an early stage. They also considered the original intent of their research to have a dual-use aspect. Sterilising the world population might after all become a technological possibility on that basis. There is a dual-use tension between promoting health and protecting food and feed production, whilst the research that aims at this may also potentially be used to kill thousands of innocents. The dilemma arises not because of the intentions of the researchers, but because of possible intentions other parties might have to use their ideas to develop weapons out of dangerous biological agents to cause harm. Should the researchers have refrained from publication, and if yes, at which stage? Should the government have impeded their research? Would such measures reduce the possible insider-threat?

The dual-use dilemma originally described the potential of a technology for both military and non-military uses. In this respect, technologies developed for non-military uses shift in function to military applications and vice versa. After the terrorist attacks of 9-11 2001, the dilemma not merely referred to this descriptive distinction between military or non-military use - which stands separate of whether either is justified use - but it increasingly became associated with the dilemma that one and the same piece of scientific research sometimes has the potential to be used for bad as well as good. In general, research with a potential of dual-use research aims to provide benefits but comes at a risk of misuse by rogue states or terrorists groups or criminal groups.

Scientific research can hold a potential to cause harm even though it intends to promote good. This does not necessarily mean that all technology is neutral and that only in their use or application, either good or bad intent is demonstrated. Some technologies may be rigged for either a specific use, its use being implicit in their design; some technologies may therefore lend themselves more easily to what is considered a bad use than others, regardless of the intentions of the researchers in question.

Resolving the discussion on how to deal with dual-use is not merely a question of disentangling the information-knots involved, exposing issues on which not enough information is available and then making rational choices based on good information on any risk of bad intended use of technology. What is valued in society also plays an important role in this respect. There are some main tension-areas for the dual use issue. One problem is the tension between freedom of research and dissemination on the one side and potential malintended use on the other. A second is that what may be perceived as justified military use by one party may be regarded as an unethical line of research for another. A third problem may be whether a specific technology is merely an artifact, whether it is 'innocent'; certain technologies may be rigged for bad use. Is it merely the person pulling the trigger, or might there be something wrong with the concept of a gun?

3.2 Biometrics technologies

A case: passport and biometrics data

From the 21st of September 2009 all Dutch have been obliged to provide their fingerprints when they apply for a new passport. This was a controversial measure since storage of fingerprints in a database was not made obligatory in Brussels, merely the rendering of the fingerprint on new passports. Aaron Boudewijn, a student from the city of Utrecht (the Netherlands) applied for a new passport, but refused to provide for his fingerprints. He was therefore refused a new passport Boudewijn went to court because he didn't want his fingerprints to be stored on a governmental database: "They may use my fingerprints for my passport but I don't want them to be stored in a central database", he told a national paper. According to the student, the government is harming his right to privacy. Furthermore, his fingerprints would become easy to reproduce, with all attached risks and consequences.

Biometrics is an umbrella term for all technologies that identify a person on the basis of his or her biological traits or behavioural characteristics. There are three important drivers for the development and introduction of biometrics technologies: 1. National security & criminal investigation. After the terrorist attacks of September 9th, the threat of terrorism became a prime motive to boost security measures. This included the further development and introduction of biometrics technologies; 2. Applications for personal identification in industry and corporate business also form an important driver behind innovation of biometrics

technologies; 3. Biometrics technologies also know numerous commercial applications: it makes it possible to target specific consumer groups.

Biometrics technologies not only offer a bleak dystopia of Eastern German proportions. They can be useful since they are more trustworthy than other identification methods. They may aid in avoiding mistakes in an increasingly complex health care system, in countering threats of terrorism and in identifying criminals. Digitalisation caused an exponential growth in the number and spread of biometrics technologies. They also rendered the body 'readable', in terms of digital codes and ciphers. This carries along several ethical issues.

The emerging discussion on the harms and benefits of biometrics technologies mostly focuses on the tension between the right to privacy and issues of security. Most importantly, there are concerns over the role of biometrics technologies in the creation of a so called 'surveillance society'. An underlying issue is that data collected for one specific purpose may unintentionally or without authorisation be used for entirely different purposes. This shift of function, also referred to as 'function creep' does not merely pose a problem for privacy in security applications of biometrics, but also in commercial applications. In the public sector, uses of personal data that potentially pose a threat for personal privacy include the 'war on terror and criminality'.

Dual use and biometrics will serve as 'test cases' for our value-based and informed approach to governance. The main idea of these case areas is that in their treatment, the work conducted in the first four WP's will be synthesised. The four WP's include a theoretical elaboration of what we understand to be a value, an approach to 'measuring' people's values through social scientific means, a integration of public discourse and public participation and an approach of values through law and regulation. These four pillars of research will be further discussed in the next part. With regard to both case areas, we would appreciate input on the following questions:

Questions for the end-users:

- ***In your experience and at your work place, will planned research dealing with dual use / biometrics raise questions about ethics / values, and if they do, who will typically be expected to deal with these questions?***
- ***To what extent do you feel you / your institution have / has mechanisms which are able to deal with those kind of questions in a satisfactory way?***

4. Impressions of four pillars of research

The idea underlying the Value Isobars project is that a combination of conducting basic research and collecting overviews from existing material in various disciplines dealing with values will help us to:

(iii) draw a blueprint for an improved and value-oriented S&T governance;
(iv) provide advice for deepening research on core questions of good S&T governance.

To this end we have included four work-packages that deal with different but inter-related aspects of values in society (the fifth: see previous chapter; a sixth serves as a synthesis work package):

1. The first work-package (henceforward WP) deals with philosophical and conceptual issues. It asks what philosophy, ethics, the humanities in general, and elements of the

social sciences (e.g. sociology) can tell us about the nature of values and their influence on our decisions and attitudes.

2. The second WP deals with methodological issues, and is strongly focused on research from social psychology. It asks how we can learn what values people have, and what difficulties are posed by empirical research. In other words, it asks whether and how we can sketch an empirically sound landscape with European value isobars that would show us the "pressure zones" of certain critical values in relation to S&T.
3. The third WP deals with communication and dialogue and departs from participatory research in social science and technology assessment. It looks at how can we interact with people's values more directly, and whether we can actively partake in the dynamics of value-change.
4. The fourth WP deals with a spectrum of legal instruments that together make up the repertoire of political bodies that deal with S&T policy. It asks whether certain instruments, e.g. soft law, are more suited to stimulate value-based S&T governance in harmony with stakeholders and publics than others, particularly when it comes to new technologies with great ethical uncertainties.

All these WPs, together with the fifth (two case areas) contribute to the project with several detailed analyses and reports. The reports move slowly from the merely analytic to the critical and then to the more innovative aspects of the project. This level of detail and scholarly rigour is necessary for the overall quality and trustworthiness of the project. The individual reports in sum build up to the eventual general conclusions. The papers produced for each WP were a source of material for this document, but they stand for themselves and will eventually be available on the website for all those who are interested. The material presented here on the basis of the individual WP's can form a useful backdrop for understanding the project, and particularly for the end-users. We shall include here not a full-fledged summary of the individual papers, but rather some limited extracts that focus on selected themes that end-users might find interesting. We would be interested in receiving critical and constructive feedback by the end users on this preliminary document.

4.1 Selected highlights from WP1:

WP1 discusses among others the issue of European values. In particular the following emerges:

With regard to a concept of European values, Hans Joas points to an apparent paradox: Do Europeans share these values? Or do these values unite Europeans in a unique way? Some values are clearly not to be limited to Europe itself; moreover, it is often claimed that they have universal validity. This could mean that Europeans are united by something that they do not see as restricted to Europe. According to Joas (2005, p. 38), we do not have to speak of a paradox here. Values do not constitute exclusive systems by themselves but are believed, held and spread by people. As values are related to experiences and interpretations, it is possible to combine the particularity of individual experiences with the universality of values. Therefore, if we ask for European values we do not only have to ask for values themselves but also for joint experiences. – Sources of European values are:

- Hellenistic-Roman antiquity that spread beyond Europe and that represented environment for Judaism and Christianity;
- Islamic influences posed a military threat but also returned antique heritage in philosophy and gave the impulse for the creation of European universities;

- Germanic influences that are e.g. visible in the tensions between Germanic and Roman law;
- Plurality of religious confessions that led to a definition of basic rights that are independent of religious foundations;
- European democracy movements since 1789 that also resulted in tensions with ethnic, religious and other communities;
- Future political locations of Europe in times of globalisation and technology-induced change.

Joas & Wiegandt (2005) also add the estimation of inwardness and of ordinary life and the experiences with slavery and with totalitarian regimes. Drawing a map of European values therefore not only means that we locate topographical features whilst tagging them with values, but also that we have to bear in mind collective experiences.

A last aspect which has not been mentioned so far but which definitely needs consideration is the distinction between European values and the values of the European Union which started as a union of economies of post-World War II West-European democratic nation states. Can we suppose that the values of Europe and the EU are congruent? If not, which implications does this have for „Value Isobars"? And finally, European values do have a prescriptive function: European values are more than the landscape of social values to be described. European values are also to be as authoritative and binding for EU citizens and policies, even if the content of specific values is vague and open to different nuances and to ascertainment.

Now these reflections seem to lead over to another question, namely how values, European or otherwise, can be related to governance of S&T. Discussions about the concept of governance are in themselves quite varied and complicated. But it may be easier to build onto values in governance than to start out with ethics and ethical theories. Values enable positive action and they are experienced as more guiding than restricting. Ethics on the other hand is often seen as interfering with political processes and established policies. Restrictions might follow that seem hard to reconcile with an assumed ethical pluralism in Europe.

Thus there is an apparent tension in relation to governance: to the extent that this project deals with a concept of values that might not account for context-specific and action-guiding provisions, it might in effect weaken other approaches which are more closely linked to ethics proper and are more restrictive. However, Value Isobars is heading in a different direction:

> The goal of this project is to provide the blueprints for a value-based and value-informed new and flexible governance of the science-society relation in Europe. Furthermore, the study shall identify necessary research tasks in order to move from a generic understanding of value-based and value-informed governance to more specific mechanisms of governance that improve current practice.

If policy makers have to cope with a complex situation, the effectivity of hierarchical modes of governing is reduced. In that case, the success of policies not only depends on voluntaristic public-private networks but also on the citizens who have to understand, support, endure and participate consciously and deliberately (Offe 2008, p. 73). Offe emphasises the importance of good political communication and refers to two possible ways to promote this communication: transparent information on relevant policy facts and problems, and the reference to norms and values as decisive motives and justifying foundation of political programs. The blueprints of value maps that Value Isobars eventually will produce, can contribute to this improved political communication. As governance also deals with the

regulation, development and application of legal norms, standing rules, standards and codes, it will be a useful tool in combining legal aspects and value landscapes in S&T policies.

The shift away from ethics towards values can be safely understood as being part and parcel of new modes of governance – from binding and restricting rules to open "positive" tokens. However, this move does not come without a price. Problems such as conflicts of values or ethical dissent still have to be dealt with. The issues to be settled still retain their normative dimension. This is where more work is to be done in due course of the project.

Questions for the end-users:

- ***Do you share the view that European values, whatever their specific nature, not only are descriptive of values held by people, but also imply a normative stance, i.e. they should to some extent guide among others European policies on S&T?***
- ***Do you share the view that in good governance of S&T it is somewhat easier to refer to commonly held values rather than to ethics as guiding principles or constraining factors?***

4.2 Selected highlights from WP2:

One of the main subjects of social psychology is the question of people's attitudes to various things, concepts, and realities (e.g. to new technologies). Social psychology has embarked on studying people's attitudes empirically, both through larger surveys and through more qualitative research. Now, attitudes are – assumedly – not the same as values. Since this project s about values, and their role in S&T governance, the question arises what is the difference and is there any gain in replacing attitudes by values in empirical study?

WP2 starts by observations concerning the difference between attitudes and values: An attitude is a form of representation of the world with the function of ordering objects and states of the world in terms of individual preferences. Another way of representing the world is through social values. Such values have the function of ordering states of the world in terms of normative prescriptions – what should and should not be done. Values differ from attitudes; they reveal an aspect of personal identity, and while they are espoused by individuals they are essentially social in origin. Values can be thought of as more general concerns, or 'organising principles', that give structure to various attitudes. As such, values might be understood as a latent dimension underlying attitudes. In terms of methodology this means that values often need to be reconstructed by the researcher who analyses a series of attitudes in combination. Such 'revealed' values complement 'expressed' values (here, the individual explicitly says what she or he likes). An example of revealed values is the concept of 'technology optimism': in the Eurobarometer on Biotechnology, respondents are asked about whether they assume a number of technologies to make life better or worse in the future. While responses for the single technologies might be considered attitudes, something like a value of technology optimism may be deduced from the pattern of responses across the different attitude items.

An example of revealed values is the concept of 'technology optimism': in the Eurobarometer on Biotechnology, respondents are asked about whether they assume a number of technologies to make life better or worse in the future. While responses for the single technologies might be considered attitudes, something like a value of technology optimism may be deduced from the pattern of responses across the different attitude items. From what

might be taken as attitudes to these technologies we use multivariate statistics to create such a latent variable – the degree of technological optimism. Now we find that this latent variable is highly correlated with a number of other aspects of people's perceptions of new technologies – including perceived usefulness, risk and moral acceptability.
We also find that people in the US express significantly higher technological optimism than people in Europe. This optimism carries over to technologies that people know nothing about.

In parallel we have evidence from mass media coverage of technologies. Our findings suggest that in the US people are generally gung ho for anything new in technology, while in Europe there is a 'wait and see' approach (note: not a rejection). So, we argue there is a cultural difference in what people in the US and Europe think about the role of technology in the pursuit of the good life. In the US, technology is progress writ large – part of a value system permeating the everyday life of citizens. By contrast, Europeans see the benefits but equally entertain concerns about potential downsides. If we bring together public perceptions, media coverage and, for example regulatory debates and decisions we can conceive of the US and Europe as 'thinking societies' pursing different discourses on technology in everyday life.

It becomes clear that measuring values is not a straight forward task. So how are values conceptualised in social psychology and in the empirical studies here referred to? As WP2 states, there are indeed a number of very different approaches:

First, there are approaches that measure what people cherish or what constitutes the ideals, goals, and guiding principles in their lives. Second, there are approaches that focus on what people consider dangerous, i.e. on what they want to avoid. Third, approaches that focuses on tradeoffs, dilemmas or value dynamics arising from value clashes. Fourth, approaches addressing questions related to enacting values, or putting values into practice. Fifth, approaches focusing on value differences across (and within) cultures and value change across time. Sixth, the more general question 'what makes a good life' can (and probably should) be considered in a number of different contexts.

We consider all six aspects in a separate paper. It should be noted that not all conceptualisations have been used in the science and technology domain. We do mention them nevertheless as this will allow us to highlight some of the neglected aspects in measuring values in this field of research. There are strengths and weaknesses in all these approaches. We shall briefly summarise them here:

The first approach: It is useful to think about what contents do play a role in thinking about the good life. The approaches in this line address the question whether there is a limited set of values that could guide value-based governance (there is no clear answer though, and maybe this is impossible). The problem with addressing positive values only is that, by definition, values are things that are considered to be good. Although there may be some differences, most people will consider most values important. Especially if rating scales are being used, the responses will be clearly skewed towards the agreement pole. This is the so-called 'values as truisms' problem. From a pragmatic point of view, it is important to distinguish what values are considered more relevant than others.

The second approach: There is not much research into what people dislike or want to avoid, but in empirical research such "negative" values often come in implicitly (without necessarily being labeled as such). The advantage of including the perspective is that it becomes clear that values not only are about what we are attracted to but also about what we want to avoid.

The third approach: When one considers tradeoffs, conflicts and value clashes, one addresses the value-as-truisms problem. The question is no longer what is valued, but rather what is valued more than something else (or who values what more). In terms of methodology, people might, for example, be confronted with forced-choice formats. This is often more difficult for respondents (as trading in values is experienced as aversive and unpleasant – both values are considered important). However, this approach allows for important insights concerning the relative importance of different values. People are asked how much gains in one value are needed to give up another value (e.g. how many lives need to be saved in order to allow human embryos being used for research). This allows for insights with regard to trade-off resistance and the degree of values being 'protected', 'sacred' or taboo. For some values people even may hold the view that they should never be traded in, whatever the benefits. An untested hypothesis based on Prospect Theory might be that violated values loom larger in public controversies than respected values. The question is, when do values become an issue at all (e.g. in the science and technology domain)? One could assume that as long as people feel values being respected this is a non-issue. Values (like trust) may become a topic if people feel them to be endangered. Alternatively, science communicators may appeal to values to justify practices by highlighting gains. A weakness of approaches considering value combinations, clashes or conflicts, is that in order to be systematic, endless comparisons are to be made (if value content is considered). There is no survey that could ask that many questions. So the challenge is to identify value combinations (or contradictions respectively) that are relevant in the specific context.

The fourth approach: Research in this line highlights that not everything that is said to be important is materialised in action, and some things – although not considered good – are readily accepted (e.g. because no alternative is perceived to exist). It is also highlighted that social representations of the 'materials' involved play an important role (for human dignity to be relevant, embryonic stem cells need to be considered human first etc). Controversies related to values often do not mean to question the values per se, but rather their implementation. Consequently, it is important to address these questions in surveys as well (e.g. human embryos are human beings from the moment of conception – yes or no). Only the combination of the value and the judgment that the value is relevant in the context will give the full picture. There is little research on these questions, however.

The fifth approach: An advantage of this line of thinking is that the unit of analysis definitely moves away from the individual towards larger social units. Although in terms of measurement there always is the problem how to address the social; mostly, it still is the individual that responds to survey questions. Then the issue is aggregation and segmentation. In suggesting a group of fatalists, Cultural Theory adds the insight that not all people may be clear about what to value (is there something like non-attitudes in the context of values as well?). What does this mean for governance? A problem may be the question what is the best unit for analysis of change (within-individual, cohorts, generations, etc).

The sixth approach: What the perspective adds is the question whether there are a number of problems that materialise in discussions on science and technology. Conceptualising the human-nature relationship may be important both in medicine (with the body as part of nature) and in controversies on global warming or on environmental issues. What kind of 'human problems' are relevant for the S&T domain? In what ways? In terms of measurement, Kluckhohn and Strodtbeck used interviewing techniques (which became the basis of

Kohlberg's moral dilemmas as well). This method allows for detailed insights but is difficult to use if one aims at representative results.

In sum, empirical research on values is guided by various approaches with their respective advantages and drawbacks. But there is a final challenge which is noteworthy in our context:

A particular challenge to measuring values in the context of late-modernity, is that the proliferation of different constellations of social contexts necessitates the existence of hybrid and heterogeneous value systems. There is growing research evidence that demonstrates that individuals as reflective agents are able to hold multiple identities and value systems. Hence, people mix and switch between them rather than being guided by universal canons. In light of this, measurements that go beyond unitary and universal accounts of values are necessary, which will explore the different situational underpinnings of attitudes towards different technological and scientific developments in conjunction with different cultures, milieus, regions, socio-demographic groups etc.

Questions for the end-users:

- ***Have you ever made use of or studied from professional interest surveys of the kind here described?***
- ***How useful do you think these studies are at present?***

4.3 Selected highlights from WP3:

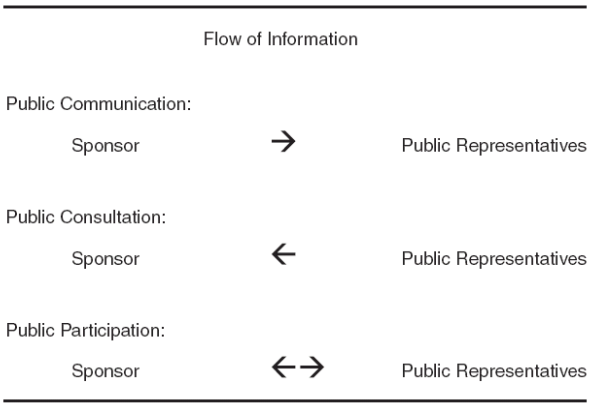
A survey is basically a flow of processed information based on data from (segments of) society to those that have use for it, e.g. decision makers. It is thus uni-directional. Concepts of good governance, however, are now typically built on involvements that are multi-directional. Deliberative democracy involves dialogue and dialogue necessitates participation. This is the focus of WP3.

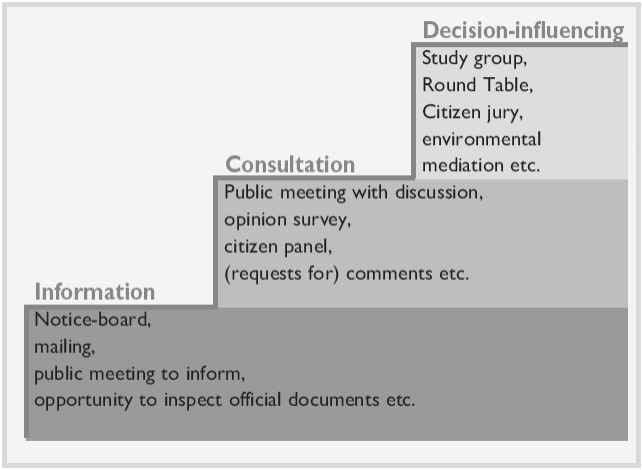
For some people, participation has a ring of "populism" and all its dangers. It is a recognised danger in modern democracies that populist strategies may lead to the tyranny of the many over the few. The recent referendum in Switzerland banning the construction of minarets is sometimes cited as an example. Thus all participation must be seen as a complement and not a substitute to the rule of law.

The European Commission stated participation as one of five principles of good governance and claims a "reinforced culture of consultation and dialogue" (Commission of the European Communities, 2001a). Citizens shall "become partners in the debate on science, technology and innovation in general and on the creation of the European Research Area in particular" and thus "must be given the opportunity to express their views in the appropriate bodies" (Commission of the European Communities, 2001b). Participation shall create more confidence in the policy chain and its end results (Commission of the European Communities, 2001a). Furthermore: Participation allows the public to voice their opinion during [a decision process] and ideally contribute to a decision making process. While from an administrative point of view participation might be seen as a process to build public support for specific projects, citizens might be motivated by the perspective to influence decisions. Participation is seen as a way to clarify different, often opposite, views and interests regarding a specific problem, and a way to improve the quality of the decision-making by ensuring fair and democratic processes.

Now, there are different kinds of participation. One decisive difference is who participates to what purpose: The idea of citizens' participation in deliberative processes is based on Habermas' (1970, 1984) theory about communicative competence, which is the ability to use language to create understanding and agreement. The idea of deliberative processes is hence to contribute to ensuring fair, democratic and legitimate decision making processes, where the citizens participation aims at unveiling a 'public opinion' and to devise policy recommendations based on a vision about a 'common good'. This view contrasts with what is termed interest group participation, which involves confronting different and specific positions to identify a compromise balancing the different opinions. Participation as a citizen is thus to be distinguished from participation as interested party, the former aiming at the "common good" and the latter aiming at conflict resolution.

WP3 presents two simple graphic representations that depict the varieties of participation (the first one based on Rowe and Frewer 2005, and the second one based on Arbter et al 2007):





WP3 presents a long list of different participatory methods, many of them widely used in and known from technology assessment studies. However, in Value Isobars we focus on the question of value-dialogue in relation to S&T. WP3 shall also conduct participatory exercises in order to gain practical experiences and input in our more general discussion. Thus not all of these methods seem equally suited for this task. WP3 has tentatively marked five such methods as in principle suited for participatory value dialogues, and another one, namely Deliberative mapping, as also suited in principle but in practice as too demanding on available

resources (while another four methods may be of limited use as supporting mechanisms). We shall briefly introduce these five methods:

The Charrette:
Charrette is an intensive face-to-face process designed to bring people from various subgroups of society into consensus within a short period of time. It is adopted to develop action plans and is thus output orientated. There are three phases of a Charrette: the pre-Charrette, the Charrette-workshop, and the post-Charrette. During the pre-Charrette a diverse group of citizens or stakeholders, representing abroad base of interests, is appointed as a steering committee. This steering committee is included in defining the issues and goals for the Charrette-workshop [framing!]. At the Charrette workshop the steering committee presents its interests and ideas to invited citizens. The invited citizens can further discuss the topics with the steering committee members in interview sessions. After these sessions every participant 'votes' for the most important issues. The Charrette-team (steering committee and facilitators) reflects on the input of the public and analyses the results. The Charrette-workshop can be planned from one to ideally four to seven days. At the end of the feedback cycles the Charrette-team finalises the ideas and prepares (an) action plan(s). At the post-Charrette the workshop results will be presented to the public and implementation might start.

Consensus Conference (the "Danish model"):
A consensus conference is a public enquiry in which a group of lay people pose questions to a panel of experts, assess the answers and write a (consensus) statement at the end of the conference. There are different models whether consensus is required or not. An ideal process comprises study sessions prior to the conference where the citizens' panel discovers the topic and its significant issues (e.g. by drawing on experts and documents). At the public Consensus Conference the citizens' panel poses key questions to an expert panel. After expert presentations and citizens' cross-examination, the citizens' panel composes a report which is publicly presented and disseminated policy-makers, and other interested people.

Scenario Building Exercise / Scenario Workshops:
"Scenario methods are used in the construction of different possible models of the future" (Kosow and Gaßner, 2008). There are several phases of a scenario process: 1) identification of the scenario field, 2) identification of key factors, 3) analysis of key factors, 4) scenario generation, and 5) scenario transfer (if necessary). Normative narrative scenario techniques can be used for participative approaches with a focus on constructive options and common vision building. Experts, representatives of civil society and policy-makers can be integrated likewise. There are several variants of scenario building exercises, e.g. group sessions within interest groups with a following plenary session, or building best-case and worst-case scenarios. Factors along which scenarios will differ can be chosen, e.g. social values. Scenarios are documented in written reports and are presented to the relevant publics.

Neo-Socratic Dialogue (NSD):
"A NSD is an inquiry into ideas, originally meant to find consensus on some topic through a joint deliberation and weighing-up of arguments. The dialogue aims at visioning, explaining values and clarifying fundamental concepts" (Littig, 2003). "A second aim of the NSD is to learn to have a dialogue instead of a discussion. This requires adequate command of a number of dialogical roles, skills and attitudes, especially suspending judgements and keeping a balance between taking position and resigning" (ibid.). In the NSD arguments are based on experiences of participants. The focus lies on a single fundamental ethical question (e.g. Do animals have rights?). "The NSD follows the following procedure: Before the discourse

commences a well formulated, general question is devised. The first step is to collect concrete examples experienced by participants in which the given question plays a key role. The group selects one example, which will usually be the basis of the analysis and argumentation throughout the dialogue. Crucial statements made by the participants are written down on a flip chart or board, so that all can have an overview and be clear about the sequence of the discourse" (ibid.). Based on the concrete examples the focus question will be discussed and abstracted to a level of norms and principles. A NSD is moderated by a trained facilitator who will also document the reasoning of the dialogue. In a follow-up session participants can reflect on their insights and identify approaches for implementation into governance.

Round Table:
The Round Table does not have a predefined design. Basically, it is an open discussion round of a group of people. Participants might be stakeholders or lay people. The discussions can be output orientated or not, it can be a single discussion or a series of Round Tables. Felt et al. (2008), for example, brought together fourteen laypeople and seven genome researchers to discuss the social and ethical aspects of genome research.

No decision has yet been made as to what method to use in the context of Value Isobars, but a slight preference seems to be pointing towards either the Charrette or the Neo-Socratic Dialogue. The hope is to test a method in regard to its ability to sustain a clear value focus in a participatory exercise also in the context of S&T. Improvements to the method can then be suggested later.

Questions for the end-users:

- ***In your professional experience and work, do you have any direct or indirect use of participatory exercises engaging the public(s)?***
- ***Would you be prepared to give us any recommendations in regard to the five methods mentioned above?***

4.4 Selected highlights from WP4:

One may ask how the new EU discourse focused on human values and the rights of the person is shaping the legal and regulatory frameworks for new sciences and technologies in a way that responds to the social or individual values at stake.

Decision makers design strategies and / or policies. Such policies may vary in regard to their binding status. Governments and governmental bodies typically make decisions that are more binding than others. To this end, they use various mechanisms of law. This is the domain of WP4. In this WP the notion of law encompasses either binding legal instruments of European law, i.e. regulations and directives of the European Council and the European Parliament and decisions of EU institutions; or so-called soft law that is not formally binding and may emanate both from EU institutions and self-regulatory entities, for example, professionally-based codes of conduct. Law as a normative framework is essentially shaped by values: on a more general and abstract level, by its intrinsic values of justice, equality and security, and on a more applied level, by those that are codified through the choices of the legislator in particular domains of policy or regulation. The former tend to be universal while the latter are evolving and changing, framed by a society that undergoes a process of adjustment, in particular, to a new relationship between the law, science and technology.

The shaping of law by values is particularly significant with regard to principles and rights. Attention should be drawn to the fact that there is no longer any rigid legal hierarchy. Different layers of principles and norms interrelate and influence each other. The general principles of law or the «pre-state or pre-positivist principles of law», especially those widely accepted in the European Union and inserted in the Charter of Fundamental Rights of the European Union, are a relevant illustration of this interaction.

Values generally lead to principles translated into rights and these to rules and regulatory instruments in a «series of interlocking definitions and distinctions» (Dworkin, 1977: 18). This «legal cascade» thus flows from normative principles to ordinary law and case-law, and to soft-law instruments such as codes of conduct.

The EU Charter on Fundamental Rights that has just entered into force with compulsory effect has been regarded as an effort to make human rights "determine" rather simply "limit" the EU legal system implying a demand to the legislator and judiciary to "tilting the balance between regulatory policies and individual freedoms in favour of the latter" (von Bodgandy, 2000). The Charter may then play a role as a benchmark against which the balances of various principles, including economic freedoms, with fundamental rights can be tested.

Article 1 of the Treaty of Lisbon affirms that "The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities." Article 2 goes a step further in the specification of EU's fundamental guiding values: first, an area of freedom, security and justice is provided for EU citizens, in which the free movement of persons is matched with appropriate border controls; second, an internal market is set up based on balanced economic growth, a competitive social market economy, and a high level of protection and improvement of the quality of the environment. According to the same article, an additional objective of the internal market is to "promote scientific and technological advance."

No doubt, the Charter and the Lisbon Treaty now offer a prime setting for the expression of the most prized principles and basic human rights in Europe. In this connection it should be recalled that despite their equivalent status as principles of law or as human rights, several principles and rights contained in the Charter may collide with each other. In fact, conflict or clash of rights is a familiar notion to the law, as is the proportionality principle that seeks to address such conflict.

When the individual is referred to in an article of the Charter a right is being stated, whereas when the Charter declares that the Union should acknowledge and protect specific values (e.g. the environment), it is asserting a principle. This does not mean that principles are weaker; in fact, European institutions are required to comply with such principles and can even be judicially responsible for not complying with them.

National constitutions and, at the interstate level, international treaties provide a prime setting for the expression of the most prized principles and the formulation of basic human rights, in other words, of societies' "morals". This is true nowadays for the EU's Treaty that incorporates the Charter of Fundamental Rights. European values are inextricably merged with principles and with their binding nature of "what is" and "what should be".

While Law can be identified with general and fundamental principles and rights, regulation is to be understood as the control exercised by a public agency over activities that are valued by

a community. Public regulation involves policy choices and in that sense it represents a «materialisation of the law». The legal order thus develops in a gradual manner from the initial generic framework set by principles and rights, normally stated in treaties and constitutions, progressively narrowed to the public agency regulations which usually entail binding rules.

While assessing the translation of values into European law and regulation concerning science and technology, one should not disregard the institutional and procedural mechanisms. This includes the channels for stakeholders and civil society opened up by law to have a say in the regulatory process. By these means they can express "their" values and ultimately shape the value system brought into the regulation. To what extent are there «platforms of dialogue on values» in that context as recommended by the European Commission (EC, 2005: 20)? And how is value diversity across Europe or across social groups accounted for?

How does this all spell out in regard to a technology, e.g. biometrics which we introduced as a case above?

Biometric technology turned out to be one of the central pieces of national and international security and immigration policies in Europe. One may guess that the EU option may have been part of a political strategem to render a novel EU security policy more acceptable to public opinion. Indeed, biometrics is at the centre of a real conflict, opposing liberty in the sense of free movement of persons with security as it implies strengthened border controls of people. Moreover, the growing use of biometrics as a security technology risks impinging on individuals' privacy and personal data protection, two related rights guaranteed by the EU Charter (Articles 7 and 8). In reality, at present the weighing of internal security against privacy and personal data protection lacks a clear legal basis in the EU, as the European Court of Justice has recognized in a recent judgment. A paradox may be that "surveillance techniques (...) were developed as means of granting civil rights and, at the same time, serve as potential means for states to gain informational power over citizens" (Liberatore, 2007:113).

Article 6 of the Charter states the "right to liberty and security", but raises a number of issues:

- Why have liberty and security been treated as a single right in the Charter?
- Should they be regarded as the two faces of the same coin or rather as conflicting values?

It is particularly illuminating to compare the level of legal protection or interference in different technologies. Some technologies seem to call for absolute prohibitions. A case in point is human cloning. The EU Charter of Fundamental Rights prohibits the reproductive cloning of humans (Article 3, §2, d), while EC research bans the funding of research on human cloning (therapeutic or reproductive).

Current EU law addresses human cloning through an absolute prohibition based on the fundamental nature of the values at stake, above all human dignity, which is believed to deserve higher consideration than research freedom and social rights like the right to health. In contrast, the use of biometrics has been declared in principle as a free activity, and the EU is even promoting its research and development. Biometrics applications are framed by specific legal regulations. Apparently, human cloning as a technology which directly interferes with highly prized human values (human integrity and human dignity) appears to

evoke a stronger protection than biometrics, which may affect the sphere of human liberty. This divergence needs to be explored in a more in-depth manner.

In the further development of the project, WP4 will also look more closely into soft law as a regulatory tool. In regard to the central theme of the project, the mentioned conflicts between absolute protection versus balancing, and alongside this issue the question why law treats some values as being on a par and others as being differentiated, will remain central issues of analysis.

Questions for the end-users:

- ***In your professional experience with S&T, law assumedly does play a role here and there (e.g. IPRs, safety regulations etc). However, when scientific research or a technology raises issues in terms of conflicting values, in particular basic values expressed by law, do you see it as the responsibility of your institution to address these issues more actively?***
- ***To what extent do you think accompanying ELSA research (=ethical, legal, and social aspects research) is a good solution to address these issues and to plan for a robust S&T policy?***

5. Concluding remarks:

This completes our first communication from the Value Isobars project to the group of end-users. We hope we have not been too demanding in terms of reading load or language. We invite you to come up with some more general feedback to us.

- ***Do you feel you get a general idea where our project is heading?***
- ***In your opinion, has this communication been adequate in regard to making use of your expertise for the purposes of our project?***
- ***Do you think the project has the potential of making useful and practical recommendations to S&T governance in the end?***
- ***Given your knowledge of the constraints of our project, are there any particular issues you would recommend us to pursue further or take note of?***
- ***Do you have any other general comments or feedback you can give us?***

We thank you very much for your kind cooperation and willingness to help us ensuring a good and hopefully useful outcome of the project!

Oslo, 10 June 2010

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