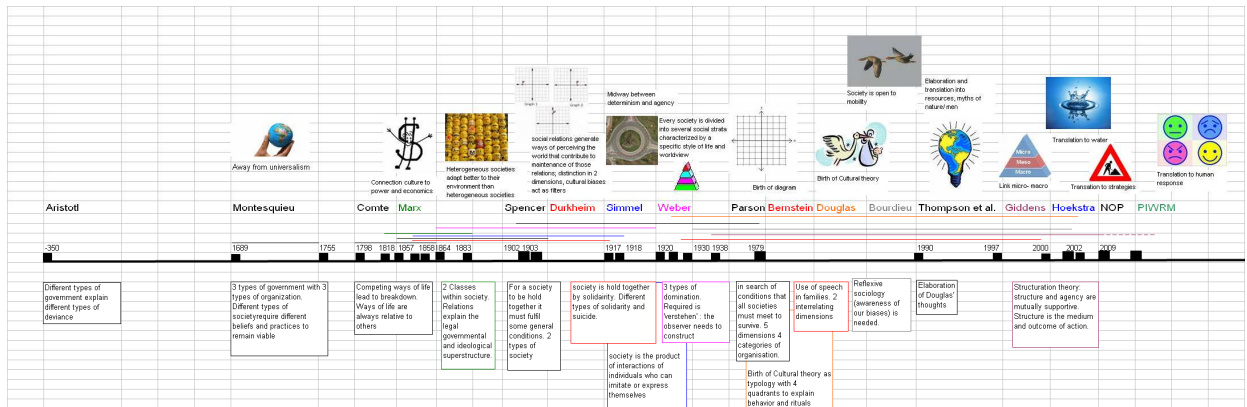# History of Cultural Theory

A summary of historical developments regarding Cultural Theory

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February 2010

1. Introduction

It is arguable that humanity has sought for unraveling the complex human mind and behavior already from the beginning of human existence. Since we have all been social animals and dependent on other's activities, the need to communicate, collaborate and at least understand some basic behavioral features has always been essential. However, with 6.8 milliards of people on earth, there is a multitude of different personalities; almost everybody has different preferences and different people react differently to the same stimuli. However, still it is possible to classify groups of people in different segments in order to better understand their actions. In doing so, groups of more or less comparable types of persons are constructed which makes it possible to find regularities that help explaining and even predicting (or retrodicting) the human construction of meaning (Thompson et al., 1990).

Aristotle started already almost three and a half centuries before Christ to classify different types of governments to better understand differences in what is approached as deviant within societies. After Aristotle lots of social scientist have tried to find a satisfying typology to describe social groups and their differences. The main goals of this report are to describe the context wherein Cultural Theory had the opportunity to be developed, how Cultural theory –as we know it nowadays- has been influenced by the work of some well known social scientists, and how Cultural Theory goes beyond. The original aim of Cultural Theory was to create a typology of social forms that aligned with 1. classificatory schemes developed by the upper class social theorists like Emile Durkheim, Karl Marx, Max Weber and so on, and 2. the new evidence collected in ethnographic studies (Verweij *et al.*, 2006). Rather than trying to be complete, we want to provide the reader with insight about the evolvement of Cultural Theory. Large part of this report is derived from a comparison made by Thompson *et al.* (1990 part two) in which they try to show that despite the unconventional language of "grid" and " group" , their typology refers to many of the same types of social relations. By comparing their theory with theories offered by past masters, they hope to make Cultural Theory more intelligible to the reader (Thompson *et al.*, 1990).

2.1 The Masters

2.2 De Montesquieu

Charles Baron de Montesquieu (1689- 1755) was a Philosopher and he is often called the ancestor of sociology. He built on the work of Aristotle and added three types of social organizations with differences in cultural bias to the different types of governments. He distinguished a republican government with virtue as organizational type, a monarchical government with honor, and a despotic government with fear. He did not spell out any underlying dimension of these categories but his work was influential for later studies. He argued that different types of society are existent within a larger part and each segment requires different beliefs and practices to remain viable. Montesquieu's mental legacies were a step away from universalism, which focuses on unraveling what *all* societies would need to maintain, instead he said that different groups of people have different requirements and characteristics, and thus different ways to be maintained. Besides, Montesquieu went beyond the classical distinction between primitive and modern societies, which only allowed for two types of societies determined by their level of civilization (Thompson *et al.*, 1990).

2.3 Comte

Despite Montesquieu's efforts to step away from universalism, a lot of scientist kept trying to find the universal law to explain the necessary conditions of life, the conditions which would inevitably lead to a breakdown or characteristics that are common to all people (Thompson *et al.*, 1990; Fay, 1996). The philosopher Auguste Comte (1798- 1857) argued that a lack of value consensus automatically results in competing ways of life. Besides, adherence to different values within one society would lead to breakdown of that society (Thompson *et al.*, 1990). Furthermore, he adopted society as a whole (rather than ways of life) as unit of analysis, which made his theory even more universalistic (Thompson *et al.*, 1990) and probably less corresponding to everyday live. Comte agreed that within a society (although they should all meet certain criteria to maintain), different groups can be distinguished: industrial groups which are based upon self regulation and voluntary action, and militant group based on a central regulating authority. Societies cycle in and out these different types, according to their level of hostility. This attempt to raise consciousness about the dynamic and changeable character of societies, as well as his belief that perceptions are always relative to other elements turned out to be valuable for later work (Thompson *et al.*, 1990). One of Comte's principles was that the function of religion is to regulate (comparable to Douglas's grid) and to combine (comparable with Douglas's group), which leaves only one viable way of life: hierarchism[1].

2.4 Spencer

As Comte, the civil engineer and sociologist Herbert Spencer (1820- 1903) tried to indentify universal laws about general conditions which need to be fulfilled in order to hold a society together. Spencer argued that differentiated (heterogeneous) societies are on the whole better adapted to their (changing) environment than homogeneous social structures[2] (Thompson *et al.*, 1990).

2.5 Marx

The philosopher Karl Marx (1818- 1883) became very influential with his controversial theory about capitalistic societies. According to Marx, there is a dichotomy in every capitalistic society between the bourgeoisie which owned the means of capital and exploited the second category: the workers. The latter are being exploited but have the capacity to overthrow capitalism for communism if all workers would unite. However, false consciousness would prevent workers to become aware of their suppressed position. Powerful about his explanations is that power relations between people explain and maintain the legal, governmental and ideological superstructure (Thompson *et al.*, 1990). Weaker is that he failed to acknowledge that capitalist systems (like other systems) are constantly evolving, which makes his theory (if applicable at all) only applicable to a limited period in the past of capitalism (Fay, 1996).

2.6 Durkheim

One of the most influential scientists for Cultural Theory as we know it today is the founding father of sociology Emile Durkheim (1858-1917). He did various research projects, but is best known for his work on suicide and solidarity. Society is –according to Durkheim- a moral phenomenon, held together by solidarity which can be either mechanic (which is the case in preindustrial, undifferentiated groups where cohesion is based upon a common set of beliefs) or organic (in industrial, differentiated groups) (Smith & Riley, 2009). Conflated with this dichotomy of

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[1] Hierarchism is the only perspective scoring high on the group and grid axes.
[2] Douglas's concept of social structures was later called ways of life by Thompson et al. (1990) (Hoekstra, 1998b)

mechanical and organic solidarity is his distinction between the dimension of group integration and individual integration, which are essentially identical with Douglas's group and grid dimensions. The difference is however that Durkheim fails to ask how these two dimensions interact. Other shortcomings of his work are his unidirectional approach of culture as deliverer of consensus and integration: conflict and exclusion can hardly be explained (Thompson *et al.*, 1990). Furthermore, Durkheim was very dubious about the role of individualism: on the one the hand he approached it as being antisocial, on the other hand he thought that even individualism had to be a social product. Finally, rather than asking what the function of something is (e.g. the function of suicide or crime) he should have asked what the function is of calling something criminal or suicide (how and why do people judge what is criminal and what is not). Despite these critics, his work offered a lot of insights which are still academicaly vivid today. He was one of the first to acknowledge that social relations generate ways of perceiving the world that contribute to the maintenance of those relations and that cultural biases serve as filters through which events are sifted in order to support their way of life (Thompson *et al.*, 1990). He was also one of the earlier scientists who started to pose a critical attitude towards determinism and he was a crucial figure in the development of holism. Durkheim claimed that society is irreducible to individual behavior and that even the more individualistic appearing acts are a function of the social unit (Fay, 1996).

2.7 Simmel

The sociologist Georg Simmel (1858- 1918) also focused on society as the product of interactions of individuals. He claimed that individuals have the choice to imitate others (and thereby experiencing the psychological benefit of security as a member of a collectivity) or to express themselves as an individual (as a marker of distinction) (Smith & Riley, 2009). However, together with Durkheim he agreed that there is a threshold –constrained by social relations- beyond which you can not go in expressing yourself differently from the collectivity. Simmel stressed his belief about the urgency to find a midway between determinism and agency, an idea which was later adopted by Pierre Bourdieu and Anthony Giddens (Smith & Riley, 2009).

2.8 Weber

The sociologist Max Weber (1864- 1920) is particularly known for his efforts to go beyond the traditional/ modern dichotomy. Central in his work is his acknowledgment of strata: every society is divided into several social strata that are characterized by a specific style of life, and by a distinctive, more or less articulated world view (Thompson *et al.*, 1990; pp.161). Status groups (groups with a common style of life and a shared level of social prestige) instruct individuals on what to prefer. Weak in Weber's approach is that his division of strata doesn't result from any dimension; he ends up with as many ways of life as there are groups in society. Besides, his classification of types of domination (charismatic, traditional and legal), as well as his two modes of action (Wertrational which is driven by cultural beliefs and goals, and Zweckrational which is driven by norms and efficiency) fail to take Egalitarism into account (Thompson *et al.*, 1990; Smith & Riley, 2009).

2.9 Radcliffe- Brown, Malinowski and Parsons

Despite Weber's and Montesquieu's efforts to step away from universalism, the search for conditions that all societies must meet in order to survive, kept going. Alfred Radcliffe- Brown (1881- 1945), Bronislaw Malinowski (1884- 1942) and Talcott Parsons (1902- 1979) shared this ambitious attempt. Furthermore, they all agreed that a given practice is only understandable in terms of the system of which it is part (Thompson *et al.*, 1990). Parsons identified five pattern variables in his search for universalism (universalism- particularism, achievement- ascription,

affectivity- neutrality, specificity- diffuseness, self orientation- collectivity orientation). However by positing a single common value system, he leaves individuals with only two choices: normative conformity (meeting the requisites) or non-norrmative deviance (not meeting the requisites to survive). Besides it is argued that his different dimensions continually measure the same underlying phenomena, which leaves his typology with only little more than restating the tradition/ modernity dichotomy. Furthermore he fails to distinguish between hierarchy (based on prescribed procedures) and individualism (based on the judgment of results), and also, Egalitarism is entirely denied (Thompson *et al.*, 1990).

3.1 Finding a midway between determinism and agency

As we saw before, Emile Durkheim and Georg Simmel were two of the firsts trying to find a midway between determinism and agency. The relationship between structural systems[3] and human agency has long been a theme within the social sciences. Some, such as symbolic interactionism, ethnomethodology (Thompson *et al.*, 1990; Smith & Riley, 2009), nominalism and reductionist constructionism stress the power of the actor. Others, such as Neo- Marxism, Parsonian functionalism, structuralism, and objectivism give more power to structures as constraining and guiding for human behavior and action (Thompson *et al.*, 1990; Smith & Riley, 2009). During the final decades of the twentieth century, cultural theory became increasingly concerned with bridging the gap between these two extremes. Most known for such efforts are Pierre Bourdieu and Anthony Giddens.

The work of the French sociologist Pierre Bourdieu (1930- 2002) cuts over a number of fields (like education, popular culture, arts) and disciplines (anthropology, sociology etc.). He argued that in order to theorize the relation between structure and agency, we need reflexive sociology, which in essence means that awareness of our biases is a prerequisite for finding a balance between objectivism and subjectivism. Probably, what is known best about his work, is the concept of 'habitus'. As Smith and Riley (1996) show, Bourdieu himself defines this concept in various ways, amongst others as 'lifestyle', embodied behavior, a kind of worldview or cosmology held by actors, and practical social competence. In general it is habitus that allows people to get through life as competent actors. It refers to internalized behavior, like stopping for a red traffic light. It allows people to efficiently react to certain circumstances, without needing to rethink and calculate before responding. Habitus can be changed (e.g. for a person from European Continent who has to drive on the left side of the road in Great Britain) temporarily or permanent. He also showed that taste (for food, but also for arts), as a consequence of differences in cultural capital, is socially determined instead of being a universal, objective criteria. Both cultural capital as well as habitus are reproduced by institutions. People are helped or handicapped by their habitus in acquiring the forms of cultural capital needed for change or success in a particular area. Although Bourdieu leaves an open door for the importance of agency, some critics state that he gives too much emphasis to structure and system reproduction and not enough to agency and change, partially because Bourdieu did not give an explanation about how change can be generated from within a system (Smith & Riley, 2009).

Pierre Bourdieu and the British sociologist Anthony Giddens (1938- ….) are often cited in one sentence. Gidden's theory of structuration is widely held to present one of the most influential efforts to overcome the dichotomy of structure and agency. He uses the term duality (as opposed to

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[3] Essentially structures is synonym to structural systems, both concepts refer to the conditions for the possibility of human action and guides what and how actions should be performed. Agents produce and reproduce these structures by their actions (Fay, 1996).This reinforcing process is meant with the term 'duality'.

dualism) to show the mutually interdependent relation between structure and agency. Structures enable and constrain human behavior and agents produce and reproduce these structures through their actions (Fay, 1996; Smith & Riley, 2009). Structure is both the medium and the outcome of action. The reproduction of structures, according to Giddens comes from the human desire for ontological security: routinization and conventionalization of social life makes people feel safe, trustful and certain. Along with the rise of ecological problems there has been new awareness that we live in an era characterized by unpredictability and danger. When choice and doubt surround us, our construction of the self needs to be reflexive instead of blindly following an identity or role that has been marked out for us (Smith & Riley, 2009). Were Pierre Bourdieu often receives critique on his emphasis on structures, Giddens is often accused of giving too much attention to the role of agency; he seems to suggest that society could suddenly change if only people thought and acted differently (Smith & Riley, 2009). The structural limit beyond which people can not go as long as they want to be part of a group or society, as argued by Durkheim and Simmel seems to be missing in Giddens's argumentation.

4.1 Mary Douglas and the birth of Cultural Theory

It is arguable that Cultural Theory as a classification typology as we know it today, was born in 1970 when Mary Douglas (1921- 2007) published her book "Natural Symbols" in which she related religion, rituals and symbols to other branches of social thought. Before explaining her famous grid- group dimensions more in detail, we look back at the work of Basile Bernstein (1924-2000) which (together with Durkheim) greatly inspired Mary Douglas (Rayner, 1992). Bernstein researched linguistics and the use/ meaning of speech and communication in families. He distinguished two relating dimensions (see figure #): 1. elaborated speech versus socially restricted speech and 2. Speech being functional for positional versus personal family control. For more information about the content of the four quadrants, see figure #.
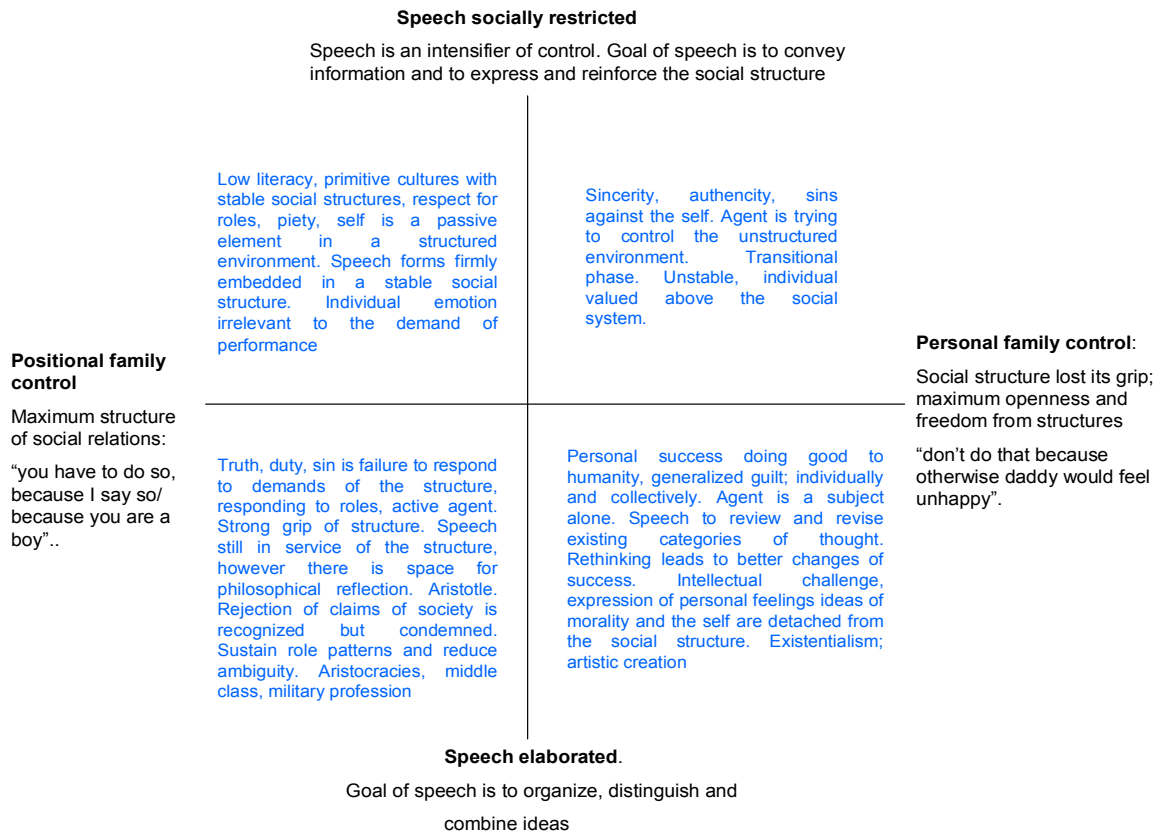
Speech socially restricted

Speech is an intensifier of control. Goal of speech is to convey information and to express and reinforce the social structure

Low literacy, primitive cultures with stable social structures, respect for roles, piety, self is a passive element in a structured environment. Speech forms firmly embedded in a stable social structure. Individual emotion irrelevant to the demand of performance

Sincerity, authencity, sins against the self. Agent is trying to control the unstructured environment. Transitional phase. Unstable, individual valued above the social system.

Positional family control

Maximum structure of social relations:

"you have to do so, because I say so/ because you are a boy"..

Personal family control:

Social structure lost its grip; maximum openness and freedom from structures

"don't do that because otherwise daddy would feel unhappy".

Truth, duty, sin is failure to respond to demands of the structure, responding to roles, active agent. Strong grip of structure. Speech still in service of the structure, however there is space for philosophical reflection. Aristotle. Rejection of claims of society is recognized but condemned. Sustain role patterns and reduce ambiguity. Aristocracies, middle class, military profession

Personal success doing good to humanity, generalized guilt; individually and collectively. Agent is a subject alone. Speech to review and revise existing categories of thought. Rethinking leads to better changes of success. Intellectual challenge, expression of personal feelings ideas of morality and the self are detached from the social structure. Existentialism; artistic creation

Speech elaborated.

Goal of speech is to organize, distinguish and combine ideas

Figure 1: Basil Bernstein's typology of the use of speech and communication in family control.
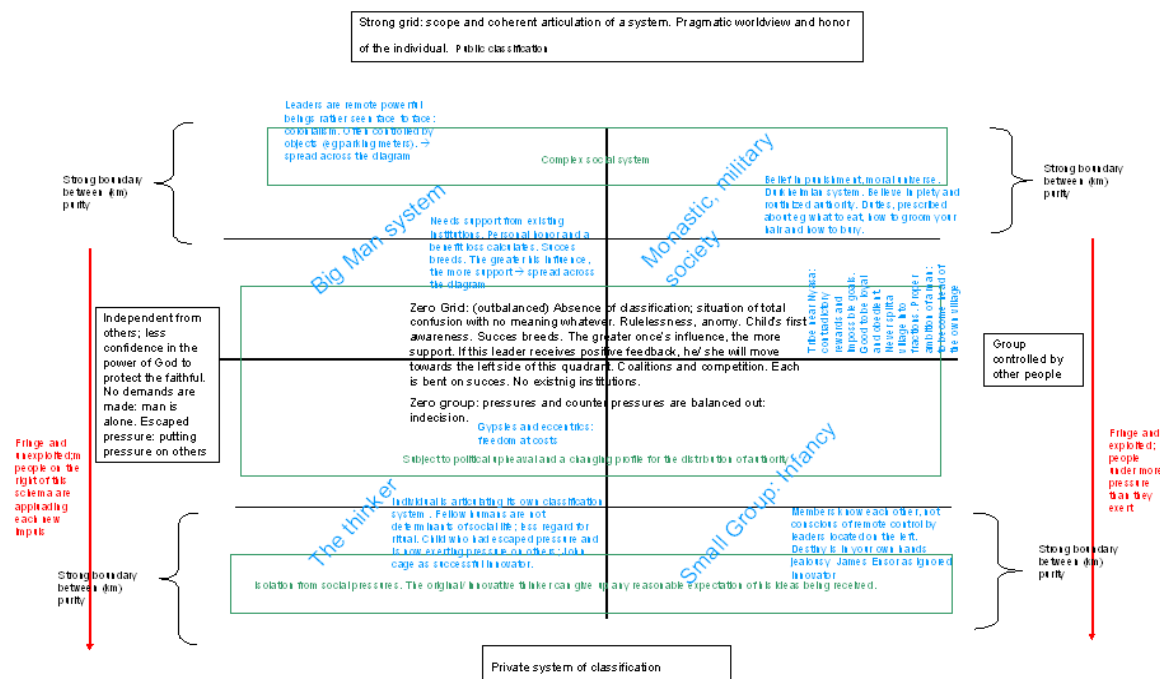
In 'Natural Symbols' (Douglas, 1970), Douglas argues that rituals –like speech- can be approached as transmitters of culture generated in social relations and exercising a constraining effect on behavior. Each symbol only has meaning in relation to other symbols in a context. Without a context of traffic regulations, an orange traffic light has no meaning; it is the context that provides meaning (Douglas, 1970). The same is true for behavior: each type of behavior is embedded within a social context. What is desirable in one context (culture) can be rejected in another. Douglas developed a model to organize a rich store of information on cultural biases, while simultaneously being flexible, dynamic, and capable of incorporating change. Innovative was that Douglas added a third and fourth category of organization (what we now call egalitarism and fatalism) to the already known categories of hierarchy and market. Also, she coherently paid attention to change and heterogeneity (Douglas, 1970; Thompson *et al.*, 1990).

Douglas' typology is briefly summarized in the figure #. She identified two dimensions: the vertical ax refers to the *grid* dimension, indicating the extend to which individuals behave according to prescribed rules, norms and social constraints[4]. These constraints can be put by a public classification system (at the top of the diagram), or by a private system of classification (the bottom of the diagram). In the middle of the axes, there is an absence of classification which leads to a situation of rulelessness, anomy, and confusion; there is great uncertainty about what kind of behavior is appropriate, and how to behave. The stronger the classification system (highest and lowest parts in the figure), the stronger the boundary between purity and impurity (Douglas, 1970;

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[4] This is essentially comparable to the concept of 'social regulation' as being used by Durkheim.

Thompson *et al.*, 1990). The horizontal ax refers to the *group* dimension. On the left (weak group), people live independently from others and are free from group pressures. On the right (strong group), people are controlled by others and have a strong group membership. In the middle, pressures and counter pressures are balanced out which results in a situation of indecision. In general, people on the right are controlled by people from the left. The more support people on the left gain from people on the right, the more power they can exercise (Douglas, 1970; Thompson *et al.*, 1990). One of the purposes of this grid/ group analysis is to provide a framework to analyze differences in organizational structures and to relate them to the arguments that sustain these structures (Rayner, 1992). According to the quadrants, Douglas distinguishes 4 main categories:

1. *The big man system* (upper left): characterized by strong grid and weak group pressures. Big men need support from existing institutions and people on the right of the scheme. Personal honor is important and decisions are mainly based upon loss- benefit calculations. The higher located in this quadrant, the more powerful and remote a leader is. At the end, control is exerted by objects (e.g. parking meters) rather than persons (Douglas, 1996).
2. *The thinker* (bottom left): characterized by low grid (private system of classification) and a weak group membership. Fellow humans are not important for decisions to be made in life. The more to the left in this quadrant, the more successful people are. More towards the middle of the diagram are the eccentrics who experience freedom at costs (indecision, confusion) (Douglas, 1996).
3. *The monastic, military society* (upper right): characterized by high prescriptions (high grid) and strong group control. They strongly believe in a moral world, punishment, faithfulness and routinized authority. They have lots of duties and prescriptions, varying from what to eat till how to groom their hair and how to bury. It is good to be loyal and obedient. Again, more towards the middle of the diagram confusion exists: people face contradictory rewards and impossible goals (Douglas, 1996).
4. *Small group* (bottom right): characterized by low grid (private system of classification) and strong group memberships. Members in a group know each other very well and they are not very conscious about remote control by leaders located on the left. Destiny is in your own hands and there are strict boundaries between good (we) and evil (them). Here is also were ignored innovators, unsuccessful artists and (former) leaders without support are located (Douglas, 1996).

Strong grid: scope and coherent articulation of a system. Pragmatic worldview and honor of the individual. Public classification

Leaders are remote powerful beings rather seen face to face: colonialism. Often controlled by objects (e.g.parking meters). → spread across the diagram

Complex social system

Belief in punishment, moral universe. Druid in the system. Believe in piety and ritualized authority. Duties, prescribed about e.g what to eat, how to groom your hair and how to bury.

Strong boundary between (in) purity

Strong boundary between (in) purity

Big Man system

Monastic, military society

Needs support from existing institutions. Personal honor and a benefit loss calculates. Succes breeds. The greater his influence, the more support → spread across the diagram

Independent from others; less confidence in the power of God to protect the faithful. No demands are made: man is alone. Escaped pressure: putting pressure on others

Zero Grid: (outbalanced) Absence of classification; situation of total confusion with no meaning whatever. Rulelessness, anomy. Child's first awareness. Succes breeds. The greater once's influence, the more support. If this leader receives positive feedback, he/ she will move towards the left side of this quadrant. Coalitions and competition. Each is bent on succes. No existnig institutions.

Zero group: pressures and counter pressures are balanced out: indecision.

Group controlled by other people

Fringe and unexploited:m people on the right of this schema are applauding each new inputs

Fringe and exploited; people under more pressure than they exert

Gypsies and eccentrics: freedom at costs

Subject to political upheaval and a changing profile for the distribution of authority

The thinker

Small Group: infancy

Individual is articulating its own classification system . Fellow humans are not determinants of social life; less regard for ritual. Child who had escaped pressure and is now exerting pressure on others: John cage as successful innovator.

Members know each other, not conscious of remote control by leaders located on the left. Destiny is in your own hands jealousy: James Ensor as ignored innovator

Strong boundary between (in) purity

Isolation from social pressures. The original/ innovative thinker can give up any reasonable expectation of his ideas being received.

Strong boundary between (in) purity

Private system of classification

5.1 Thompson, Ellis and Wildavsky: an extension of the theory

After Douglas, Michael Thompson, Richard Ellis and Aaron Wildavsky are among the most influential persons regarding Cultural Theory as we know it today. In their book 'Cultural Theory' (1990) they start with defining the concept of culture, since it is vague, much defined, and there is no agreement about its content or meaning. Thompson *et al.*(1990) came up with a definition combining existent and divergent definitions and consisting of three elements:

1. *Cultural biases*, which refer to shared values and beliefs. Biases are the unspoken theories people hold about the world, enabling them to make sense of an otherwise perplexing range of information. A cultural bias refers to the automatic pilot which is responsible for lots of decisions being made in everyday life and is comparable to Bourdieus *habitus* and to '*heuristics'* as defined by decision theorists.
2. *Social relations*, referring to patterns of interpersonal relations
3. *Ways of life,* which are combinations of cultural biases and social relations and comparable to our understanding of 'perspectives' and Douglas's understanding of 'social structures'.

5.1.1 Concepts and starting points

In this section some of the most essential starting points and principles of Cultural theory will be explained. The goal is to provide the reader with a basic level of understanding of the Theory. For more (detailed) information, see Thompson *et al.* (1990).

5.1.2 Role of dimensions

Thompson *et al.* (1990) strongly advocate for categories as compounds of at least two dimensions (axes), rather than categories as designations, because according to them, the latter (although being a typology) looses explanatory power and fails to be embedded in a theory. They use – following Douglas (1970, 1996)- the *group* and *grid* dimension (also see paragraph #). The group dimension refers to the strength of group incorporation. The greater the incorporation, the more individual choice is subject to group determination. The grid dimension refers to the level of constraining prescriptions. The more binding prescriptions are, the less of life is open to individual negotiation (Thompson *et al.*, 1990).

5.1.3 Five ways of life

Following the grid and group dimensions, five ways of life are derived: Egalitarism, Fatalism, Individualism, Hierarchy and Autonomy (the Hermit, in the middle of the axes). Accordingly, there are three patterns of social relationships: ego-focused networks (Individualism), egalitarian-bounded groups (Egalitarism) and hierarchically nested groups (Hierarchy). Besides, there are 2 other positions: involuntary exclusion from all these organized patterns (Fatalism), and deliberate withdrawal/ minimization of social transactions (Autonomy). For a short description of every perspective, see Table # or (Thompson *et al.*, 1990).

Table 1: Description of the five ways of life, derived from (Thompson *et al.*, 1990)

Perspective/ way of life	Description
Hierarchy	Control, regulation, harmony resulting from differentiation of roles, prefer economic growth and collective sacrifice now will lead to group gain tomorrow. Will to take acceptable risks as long as decisions are made by experts; they will always miss some opportunities. Typical surprise: if they do bad, or others do better without being as knowledgeable or careful as they are. Group is more important than individual, premium on sacrificing for the collectively, restrict individual autonomy.
Egalitarism	Prevention, rejection of the wider society and make use of a 'wall of virtue' protecting insiders from outsiders. No authority or control, which makes conflicts difficult to resolve. Speaking in name of the group. Economic growth and abundance make it more difficult to maintain equality. Accentuating the risk, they will spot risks missed by others and miss opportunities. Typical failure: if they do not well, or if others do better. Group is more important than individual; premium on sacrificing for the collectively, restrict individual autonomy.
Individualism	Adaptation, skill, enterprise and having guts create positive sum games in which everybody is off better. Boundaries open for negotiation. Exert control over others. Prefer economic growth because it will result in having more for all. Risks are opportunities, but should always bring some awards. Typical surprise: if they do not very well, fail or if the market fails. Combine good luck, quick wits and hard work to advance yourself.
Fatalism	Coping, autonomy is restricted, doing well is never through own efforts. Excluded from membership in the group. Happy to see more wealth (economic growth), but they think they can not access. Do not knowingly take risks, but they also do not worry. Typical surprise: if they or others do consistently well or bad (predictability). Restrict individual autonomy.
Autonomy	Escaping, individually, withdrawal from social involvement altogether, disciplined and satisfied with sufficiency. Risk handling and acceptance. Withdraw from transactional involvement

Translation to human nature and use of resources

Besides their efforts to elucidate Cultural Theory Thompson *et al.* (1990) are also known for their translation of cultural biases towards perspectives on human nature and (the use of) natural resources. This was a new approach since Mary Douglas (especially till 1982) merely focussed on cultural biases related to rituals, religion and sin (Douglas *et al.*, 1969 ; Douglas, 1970). In 1982 Douglas and Wildavsky also published work in which they related the grid/ group axes to environmental risks (Douglas & Wildavsky, 1982; Rayner, 1992). According to Meader *et al.* (2006) Cultural Theory forms the basis of almost all cultural risk analysis and provides an alternative to conventional attitude- driven methodologies to environmental perceptions.

While studying managed ecosystems (like forest and grasslands) *ecologist* (Holling, 1979; Holling, 1986) discovered that different managing institutions, faced with the same situation, did different things (Thompson *et al.*, 1990). Resulting from this, they derived five myths on natural resources which were later on connected to the cultural biases by Thompson *et al.* (1990). Starting point is that each myth of nature is a partial representation of reality. People will always being surprised, independently from their perspective. This tells us that the world is never just one way: it is constantly changing. Steg and Sievers (2000) argue that myths on natural resources influence more specific environmental beliefs, which on their turn correlate with certain policy preferences. When for example adopting a worldview in which natural resources are regarded to be limited and nearly exhausted, one will regard specific environmental issues (water, biodiversity, rainforests) with care, resulting in a preferred policy of prevention of hazards and disturbances. Steg and Sievers (2000) conclude that Cultural Theory - in contrast with common theories about environmental concerns – more explicitly links risk perception to solutions to reduce these risks. For a description of the perspectivistic views on human nature and the use of natural resources, see table # or Thompson *et al.* (1990).

Table 2: A short description of the different perspectives on natural resources and human nature, adapted from Thompson *et al.* (1990)

Perspective	Description
Hierarchy	Nature is rich when used in the right way and by the right people. Nature perverse and tolerant, however vulnerable to some occasions . regulation of nature. People are born, but can be redeemed by good institutions. Regulation
Egalitarism	Mankind is trapped in a downwards spiral of resource depletion. Nature is accountable and ephemeral. Prevention and treat ecosystems with great care. Humans are born good, but are corrupted by evil institutions (markets and hierarchies), cooperation
Individualism	Nature is a skill controlled cornucopia; resources are intangible and ever expanding. Nature is benign. Laissez faire, trial and error and experimentation. Humans are self seeking, competition
Fatalism	Sometimes there is an abundance of resources, and sometimes not. Nature is ephemeral. Coping with erratic events. Human nature is unpredictable and differs from person to person., distrust
Autonomy	Nature is freely available, however it is not the aim to manage or exploit resource or to accommodate one selves to its limits. Live in joyous participation in nature's fruitfulness. Nature is resilient and its nature changes. The perception of human nature changes: sometimes they believe in the goodness of humans, sometimes they think people are ignorant,

5.1.4 Rival ways of life

Each way of life (or perspective) has a perception about how the ideal (stereotypical) world would be, who we are and how we should behave (Douglas, 1970; Thompson *et al.*, 1990; Caulkins, 1999) . The Hierarchist prefers a world with strong government responsibilities, strict confirmation to rules and emphasis on safety issues. Egalitarians prefer a world wherein humans live in harmony with nature, with enough space for water and nature, human intervention in nature is very limited and humans decrease their demands rigorously. Individualists prefer a highly technological world with fast and multiple interactions, hard workers are rewarded with high income, freedom and possibilities of self development. The Fatalist would prefer a world in which people were not so occupied in worrying about the future or ways to make the best of the future. Instead they prefer to live like gathering rosebuds while maying. All these perspectivistic ideals can be imagined, desired or contested, but not lived in, because they fail to recognise that rival ways of life are needed, either to cooperate, to define themselves in opposition against, or to utilize (Thompson *et al.*, 1990; O'Riordan & Jordan, 1999). A nation in which the different ways of life are present is less vulnerable to being surprised and will have a wider repertoire to draw from in responding to novel and surprising situations. Of course, it will still blunder but it will blunder less than societies which are more homogeneous (Thompson *et al.*, 1990; Verweij *et al.*, 2006).

5.1.5 Rival ways of life can not exist in isolation

Because of the dependencies between different ways of life, for every way of life there must be at least five ways of life in existence in order to be able to survive (Thompson *et al.*, 1990; Pendergraft, 1998; Caulkins, 1999; Verweij *et al.*, 2006). Thompson *et al.* (1990) refer to this as the *requisite variety condition*, indicating that there can theoretically be more than five ways of life, but there cannot be fewer. However, that no way of life can exist alone does not mean that every way of life has to be *equally* represented within a group (Thompson *et al.*, 1990; Pendergraft, 1998). Although adherents of each way of life rely on adherents of other ways of life to compensate their own shortcomings, they simultaneously compete against each other to attract as much supporters as possible (Thompson *et al.*, 1990; Caulkins, 1999). In any particular group and period in time, one way of life may be dominant, only to give way to another way of life at a later moment. A dynamic equilibrium wherein different ways of life compensate for the limitations of others is the result (Thompson *et al.*, 1990; Caulkins, 1999; Verweij *et al.*, 2006). It is this inward conflict (being both attracted to and repelled by rival ways of life) that generate dynamic mechanisms of continually fusing, breaking apart and reforming of coalitions (Thompson *et al.*, 1990). One can think about combinations of different ways of life in two ways: coalitions and regimes. A coalition (*alliance* in the words of Thompson *et al.* (1990)) differs from a "regime" in that a regime refers to the relative power of one way of life (or a combination of two or more ways of life) that exists in a given group or society, while coalitions refer to how ways of life relate to each other (what do they have in common and how do they differ, independently from their power or strength). Regimes refer to power relations between dominant ways of life and so called undercurrents (non- dominant ways of life) in a given group or community. Coalitions refers to one (usually decision making) group in which different ways of life come together.

People can form coalitions with adherents of other ways of life to strengthen their own way of life, to increase the number of supporters or to decrease the number of leavers (Thompson *et al.*, 1990). Coalitions can be formed either by groups who share common ideas (e.g. egalitarians and individualist share a low position on the grid axe, indicating that they will both try to restrict governmental control) or by groups who are very different, hence do not appeal to similar voters and do not need to worry about defecting supporters (Thompson *et al.*, 1990). The consensus building capacity of sharing a grid- or group dimension in the quadrant of Douglas (1970) and

Thompson *et al*. (1990) is often underestimated. According to Thompson *et al*. (1990) adherents of different ways of life do not necessarily need to agree on everything in order to agree on particular issues. Shared dimensions might produce similar policy preferences, but also opposites might share some beliefs (e.g. Hierarchists and individualists both have a relatively positive view of technological innovation). Furthermore, adherents of all three active ways of life can reach consensus on certain strategies, while trying to achieve different goals. The large green rivers for example, may be acceptable for both egalitarians as well as Hierarchist, however for different reasons. The former may perceive it as an initiative to create larger nature areas while providing more space for water, whereas the latter perceives it as a measure to control the discharge and guarantee more safety.

Whereas *coalitions* of representatives of all three active ways of life can exists for longer periods, *regimes* that incorporate all three active ways of life are according to Thompson *et al*. (1990) rare and extremely short- lived. History (e.g. in wartime) showed instances of regimes existing of adherents of all ways of life, mainly formed to put aside their differences for defeating a common adversary. However, these regimes were usually also unable to come to agreement. Such a regimes cannot be sustained for more than momentary moments (Thompson *et al*., 1990).

5.1.6 Rival biases and social relations are caught with danger

In the previous paragraph, we discussed to what extend different *ways of life* can be combined on a coalition - or regime level. In this paragraph we will focus on combinations of *cultural biases* and *social relations on* individual levels. A cultural bias refers to implicit theories people hold about the world, whereas social relations refer to patterns of interpersonal relations. Viable combinations of cultural biases and social relations come together in *ways of life* (Thompson *et al*., 1990) or 'social relations' as it is called by Douglas (1970). It should however be noted that the use of these concepts is not univocal. Different scholars and researchers use different concepts to describe similar features. Rippl (2002) for example, talks about biases comprising behavioural patterns (social relations, actions and social structures) and cosmologies (cognitive system including attitudes and values, also used by Pendergraft (1998)). Middelkoop *et al*. (2004), Hoekstra (1998), Rotmans and de Vries (1997), van Asselt *et al*. (1995) van Asselt (2000), van Asselt *et al*. (2001), Valkering *et al*. (2008b), Offermans *et al*. (in press) and Meader *et al* (2006) describe a similar distinction when referring to worldviews, management styles and perspectives.[5]. Following van Asselt (2000) they define a perspective as: 'a coherent descriptions on how people interpret the world (a worldview) and which guides them in acting (management style)'.

The main message within all these definitions is that people do not view reality with pristine eyes, but through perceptual screens formed and transmitted by interactions (Renn, 1992). Therefore we think it is valid to theoretically equalize the concept of worldview with a cultural bias. Both terminologies will be used interchangeably. Furthermore, *management style* and *social relations* can possibly refer to comparable aspects; however this is not automatically the case. The concept of management style covers a broader spectrum than the concept of social relations. The latter focuses on how people behave in interactions, whereas the former not only focuses on these interactions, but also on behaviour independent from human interaction.

Theoretically and following from the so called *compatibility condition*, different biases can not be matched with social relations that do not support these biases (Thompson *et al*., 1990). This does

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[5] It is not easy identifiable who was the first one to use the concepts of worldview and management style, however, according to Janssen and de Vries (1998) it were Trisoglio *et al.* who firstly used these concepts during a conversation in Washington.

however not automatically imply that worldview and management style necessarily need to match, since management style and social relations do not necessarily refer to the same aspects. The hypothesis is that other behavioural features belonging to the concept of management style may be matched with different biases as long as main goals are supported by these given features. According to Cultural Theory social relations generate preferences, perceptions and strategies (cultural biases) that in turn sustain those relations. According to Thompson *et al.* (1990) there are only five ways of life that meet the conditions of viability: hierarchism, egalitarism, fatalism, individualism and autonomy. Of course, different people may have their own distinctive sets of beliefs, values, habits and norms. However, the assumption is that their basic convictions about life are reducible to these five cultural biases (Verweij *et al.*, 2006). Although five may seem an unfeasibly small number (Renn, 1992) it doubles the conceptual variety available in erstwhile theories of social organization (which were usually restricted to categories comparable to individualism and hierarchy) (Thompson *et al.*, 1990; Hoekstra, 1998b).

The reason for this impossibility to freely match cultural biases and ways of life (using the rhetoric of culture X to support positions from culture Y) is that it would lead to universal monism. If all individuals could use the more successful rhetoric of another culture, we would have much less variation than is apparent in the world today (Thompson *et al.*, 1990). Nevertheless, in every day life we sometimes see people with different biases acting in very similar ways. This means that although mixing cultural biases with different social relations is a path of danger, it still may happen occasionally. According to Thompson *et al.* (1990), Steg and Sievers (2000), and Dietz *et al.* (1998) it is possible to take a position inconsistent to one's way of life on occasional issues. Hierarchists may for example still belief in privatization of public transport. People can behave contradictory to their biases, because this relation is mediated by other factors such as situational constraints or social contexts (Dietz *et al.*, 1998; Steg & Sievers, 2000). However, this cultural disloyalty would be suspect. If somebody adopts more characteristics of another cultural bias, pressure will be felt either to move back to the original position and cultural bias or to become something different and adopt a new way of life (Thompson *et al.*, 1990). Besides that it is difficult to mix cultural biases of culture X with social relations of culture Y, mixing beliefs from different biases is also not that easy. This stems from the interconnected character of beliefs. One exception on one's cultural beliefs is acceptable (e.g. if you have great trust in a liberal market, but think that public transport can best be arranged by national governments), however, if these exceptions accumulate, the rule itself (liberal market) comes into question. The interdependence of beliefs thus makes it difficult to reject a part without extricating the whole. Compartmentalization of biases (mixing beliefs from different cultural biases) result from a personal unconscious failure to perceive contradictions between competing biases or through a conscious belief that different biases are beneficial (Thompson *et al.*, 1990).

Although agreement exists on the relation between cultural biases and social relations (for example Douglas, 1970; Thompson *et al.*, 1990; Rayner, 1992; Hoekstra, 1998; van Asselt, 2000; Middelkoop *et al.*, 2004; Verweij *et al.*, 2006). Renn (1992) reminds us to the fact that the exact relationship between cultural biases and social relations has never been proven. For example, does interest in safety issues lead to a hierarchical bias, or vice versa? The hypotheses that we search for social relations that support our cultural bias (Thompson *et al.*, 1990) or that social relations influence our perceptions, norms, and emotions (Verweij *et al.*, 2006) are contradictory and none of them seem to be proven so far.

5.1.7 Heterogeneity of biases

In general, cultural biases and social relations are not likely being mixed too heavily or often. However, this does not mean that the world consists of stereotype people adhering to one cultural

bias and social relation and never being willing to think about any other biases or social relations. Thompson *et al.* (1990) acknowledge that most people recognize themselves in all (or most) of the five ways of life. The extend to which you recognize yourself in a given way of life depends (amongst others) on the social context you are looking at. Different contexts determine different expectations, things to value and ways to behave. People behave differently in for example a church compared to during a football match. Social contexts may therefore (at least partially) be determining for your cultural bias, and social relations in particular.

Research from Grendstad and Selle (1997) shows that different contexts can indeed result in different cultural biases; one might well be an individualist in one sub domain (like a secondary school) and a Hierarchist in another sub domain (like during work in the office). Marris *et al* (1998) and Rayner (1992) refer to this as the *mobility version* of Cultural Theory, indicating that people will adopt to different cultural biases as they move from one institution to another. This idea is opposed to the *stability version* of Cultural Theory (Marris *et al.*, 1998) indicating that people will adhere consistently to the same cultural bias whatever the context, resulting in the assumption that individuals mainly move to institutions in correspondence with their own cultural bias. In the stability version, individuals would be the best unit of analysis, whereas institutions are the better unit of analysis for the mobility version of Cultural Theory (Marris *et al.*, 1998). Renn (1992) states that Cultural Theory is especially applicable to groups or institutions, but it can also be applied to predict individual responses, which would probably indicate a combination of the stability and mobility version of Cultural Theory. The application to individual responses is particularly true for individuals representing an organization or institution (see also Pendergraft, 1998). None of these two versions have been proven true, however it is plausible that people will try to bring consistency in their social environments and will not be too randomly distributed in social contexts. Besides, people have the tendency to seek social relationships which are compatible with their cultural bias (Grendstad & Selle, 1997; Rippl, 2002).

Apparently we need an elegant combination of these two extreme reference points, it is –again- not a matter of dualism, but of duality. If a person would perceive all objects equally through the five cultural biases, it is difficult to see how such an individual can ever act. Every object provokes five more or less different values and possibilities to respond. In other words: there are a lot of questions, but no single answer. However, an individual in one of the corners of the diagram sees all objects through the same cultural bias. In such cases, it is almost impossible to cooperating with anyone adhering to a different cultural bias (Thompson *et al.*, 1990). Variation in biases thus contributes to cooperation, but could cooperation also result in *agreement* between people with different biases? According to Thompson *et al.* (1990) agreement on the rules of agreement (for example agreeing on a rule if the majority of people accepts the rule) is an important first step, however insufficient to solve disagreement (also see Pendergraft, 1998). Agreement on the rules of agreement provides a basis for communication about what is being disagreed about. The so called perspectives map (Valkering *et al.*, 2008; Offermans *et al.*, in press) intends to further contribute to visualize the beliefs no which disagreement exists, hence also providing a basis for communication, cooperation and ideally agreement. Thanks to the limited amount of cultural biases, communication between ways of life is facilitated. We know not everybody agrees with our cultural bias and we heard arguments of other ways of life more than once. This increases our understanding of other cultural biases outside our own frame of reference (constrained relativism in the words of Thompson *et al.* (1990)). Marris *et al.* (1998) also highlight the possibility of people to be located on every spot in the diagram, hence referring to combinations of cultural biases. Extremes or stereotypes are located on the edges of the diagram (e.g. a pure Hierarchist scores high on both group pressure as well as prescriptions). Therefore, descriptions of each perspective/ way of life should also be interpreted as extreme reference points (Hoekstra, 1998b).

5.1.8 Changing ways of life and the role of surprise

Independent from the cultural biases or social relations people adhering to, ways of life are susceptible, however also *resistant* to change. Parker (2000) showed that people in general give evidence of having a distrust in change (especially older people). Change is often accompanied with distrust and hostility towards those who want to bring about change, with feelings of throwing away past efforts and contested feelings (Parker, 2000). Inconsistencies between reality and expectations are an important explanatory factor for changing ways of life. Usually, such inconsistencies are explained away, ignored or just not noticed (Thompson *et al.*, 1990). However, as evidence against expectations and cultural biases builds up, people may be forced to adapt or change their expectations. According to Thompson *et al.* (1990) expectations may turn out to be incorrect due to so called *surprises*. Surprises are events, developments or information expressing a discrepancy between the expected and the actual (Thompson *et al.*, 1990; Hoekstra, 1998b).

For example, one has a great trust in dikes expecting them to protect villages and inhabitants from floods. It would be a surprise to face a dike breach caused by fragility or high discharge. According to Renn (1992) all risk concepts share the distinction between reality and possibility. If the future would be equal to expectations, the term 'risk' would not make much sense. After only one surprise, people may try to explain the situation in such a way that it still fits within their cultural bias. For example, the dike breach was not due to the fragility of the dike, but due to a lack of governmental maintenance. However, if evidence is building up against a cultural bias, people are forced to cast around for alternative ways of life that provides a more satisfying fit with the real world. As stated before, people will always being surprised, independently from their perspective and even after changing their ways of life one, two or multiple times. This tells us that the world is never just one way: it is constantly changing and the four perspectives are equally valid (Thompson *et al.*, 1990; Pendergraft, 1998; O'Riordan & Jordan, 1999). The different ways of life tell plausible but conflicting stories. None of the ways of life are wrong, none is completely right (Verweij *et al.*, 2006). Change thus occurs because five ways of life, are not entirely or everlastingly unswerving to the real world. According to (Rayner, 1992) this assumption may lead to cultural relativism and solipsism, as it holds the claim that any person's version of the world has a valid claim to be true. Thompson *et al.* (1990; pp.70) however state that all these different interpretations are reducible to only five main claims about how the world functions and further explain that the theory of surprise has three main principles:

> 1. *An event is never surprising itself*
> 2. *It is potentially surprising only in relation to a particular set of convictions about how the world is*
> 3. *It is only surprising if it is noticed by the holder of that conviction.*

What is surprising for one way of life is predictable and solvable from another. However, it is not always clear towards what way of life people will change if their own perspective doesn't correspond with all day life anymore. Take again the example of a Hierarchist with a great trust in dikes. When confronted with an accumulation of surprises (like floods) the Hierarchist's trust in dikes may get lost and he/ she has to find a more satisfying ways of life. It is however not univocal to what way of life the Hierarchist will change (Fatalism, Egalitarism or Individualism). The direction of change is –amongst others- dependent on the surprising event itself and on the spirit of the age. As explained before, traditional theories only identified two viable ways of life; Hierarchism and Individualism (Thompson *et al.*, 1990; Hoekstra, 1998b), therefore only one direction of change was possible (towards hierarchism or individualism) (Thompson *et al.*, 1990). In Cultural theory however there are four viable ways of life, resulting in possible changes into

three different directions[6]. All movements towards other ways of life are voluntary, except for movements away from Fatalism. Once established in Fatalism, people lose agentic power resulting in a passive attitude towards change, acting and policy. Still Fatalists may desire a better or different life but contrary to the other ways of life they regard improvements as solely dependent on fate. They consider themselves not to have any influence on the course of life. Adherents of the other ways of life however will try to incorporate Fatalists to enforce their backing, making the presentence of Fatalists a foundation for competition between the other ways of life (Thompson *et al.*, 1990). Hence, movements away from Fatalism are usually not initiated by fatalists themselves, but provoked by adherents of other ways of life.

Thompson *et al.* (1990) state the following regarding change:

> *" [..] our system is always in disequilibrium, always on the move, never exactly repeating itself, always having a definite shape, yet never staying the same shape, the system itself is indestructible (Thompson et al., 1990; pp.86). [...] Stability without change is like trying to balance oneself on a bicycle without turning the pedals" (Thompson et al., 1990; pp.80).*

Important messages resulting from the aforementioned quote are that change is occurring everywhere, sometimes beyond our personal control, and necessary for stability (Thompson *et al.*, 1990). It is thus a misconception to think that Cultural Theory does not allow for change or dynamics. Douglas (1970) already argued that people change their positions within the diagram according to their age, occupation, success, desires and support.

5.1.9 Five ways of universal rationalities

Individuals and groups of people can be located on every spot within the diagram of Cultural Theory. Besides, this spot, as well as beliefs, perceptions and preferences are changeable. In general, Cultural Theory rejects universal claims about human behavior. There is no single explanatory type of behavior likewise for all people (or even most people). Neither Cultural Theory claims that there are objects or situations which are identically approached by everybody, independent from cultural biases and ways of life, so in general universal claims about human behavior are rejected. Important here, is to distinguish between doing (what do people do) and thinking (why do people do what they do). Thompson *et al.* (1990) provide the example of water wall rushing towards a group of people. One could argue that we do not need Cultural Theory to tell us to get away, and it is likely that everybody would agree on danger (the *doing* part). However, attitudes and ways of responding to a water wall may differ from person to person. Cultural Theory helps to explain why some people adopt an attitude of "women and children first" or "each for himself" or "follow the leader" (the *thinking* part) (Thompson *et al.*, 1990).The same may be true regarding protection for floods. It is often argued that all people (independent from their cultural bias) value protection for floods[7]. Essentially this could be true, however people may still not agree on suitable protection levels, ways to achieve this protection, responsible authorities to etcetera. Cultural Theory helps to explain such a differences.

According to Cultural Theory there are five rational and also sustainable solutions to every problem or situation. This also means that human behaviour is never rational or irrational in itself

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[6] As a Hierarchist one can change towards egalitarism, individualism or fatalism; every way of life has three possibilities for directional change, making the total possible number of movements twelve.
[7] This is an often debated topic between project members and between project members and external experts of the project 'Perspectives in Integrated water Resources Management in River Deltas'.

but only in relation to a particular context or from a certain point of view (e.g. way of life). Cultural Theory is thus not a rejection of rational choice theories but states that there exists more than only one way of reacting rationally to a given situation (Rayner, 1992; Renn, 1992; O'Riordan & Jordan, 1999). In rational choice theories, it is often said that a rational individuals make decisions based on maximization of their own personal benefits or advantages (ref). However, according to Rayner (1992) rational people support their way of life, hence there can not be only one set of actions rational for everyone. People are not motivated by payoffs only (at least not all people are so) (Wildavsky & Dake, 1990). Although Cultural Theory states that there is no universal way of responding rationally to events, developments or objects, it also states that – contrary to for example post structuralism and constructivism- there are limits to the number of ways in which the world can be socially constructed (Verweij *et al.*, 2006), hence preventing ending up with as many ways of life and reactions as there are people on the world.

5.2.1 Role of agency and structure

Following Pierre Bourdieu (1970) and particularly Anthony Giddens (1984), social structures both constrain and enable human behaviour. On the one hand people are constrained by social pressures and expectations telling them how to behave in specific situations (high grid in terms of Cultural Theory), on the other hand, however people have possibilities to also adapt or change these structures, expectations and pressures (low grid). The theory in general allows thus for duality of structure and agency, however, ways of life characterized by high grid (mainly hierarchism and fatalism) seem to reject this duality. The social context seems determining for maintaining these ways of life. However, still there are at least two remaining indications for duality: first, there are plural ways of life, giving individuals a change of extensive, if finite choice (Thompson *et al.*, 1990). They can relatively easily choose a high, medium or low grid way of life, especially medium grid ways of life should find a balance between individual choice (agency) and prescriptive social structures. People outside of the stereotypical reference points, find themselves relatively often on such a combined grid situation. Second, within Cultural theory individuals have the freedom to also behave in a non- confirmative way (fatalism and autonomy), referring to (voluntary) withdrawal of social interactions and expectations without losing the ability to function satisfyingly in everyday life. Schwartz and Ros (1995) state that individual value priorities indeed result from a shared culture combined with unique individual experiences. In a group, a pattern of shared values plus individual variation will be found. Elaborating on the latter, *Thompson et al.* (1990) mention that Cultural Theory includes an antidualistic conception of individuals. Besides, Rayner (1992) argues that Cultural Theory views social organizations as providing opportunities and constraining behaviour at the same time, hence allowing for a duality of structure and agency.

6.1 Application to water

According to Verweij *et al* (2006) Cultural theory can be applied to any possible domain. Examples of subjects Cultural Theory has been applied to are: risk in general (Rayner, 1992; Renn, 1992; Rotmans & de Vries, 1997; van Asselt, 2000), climate change (Janssen & de Vries, 1998; Pendergraft, 1998; O'Riordan & Jordan, 1999; Verweij *et al.*, 2006), genetically modified food (Finucane & Holup, 2005), car use (Steg & Sievers, 2000), transport risk (Oltedal & Rundmo, 2006), the high Atlas in Morocco (Funnell & Parish, 1999), common property resources (Buck, 1989), health (Hilderink & van Asselt., 1997), biochemical cycles (den Elzen *et al.*, 1997), and energy (Janssen & de Vries, 1998).

The first person publishing on ways of life (perspectives) on *water* was Arjen Y. Hoekstra (Hoekstra *et al.*, 1997; Hoekstra, 1998; Hoekstra, 1998b). He introduced the so called AQUA tool for integrated assessment and applied it both at global and river basin level. He added perspectives to gain insight in how uncertainties regarding water (management) could be handled and how controversies and different perceptions regarding water can be placed within the context of coherent point of views (Hoekstra, 1998). The AQUA model, on its turn was part of TARGETS (Rotmans & de Vries, 1997) (Tool to Assess Regional and Global Environmental and health Targets for Sustainability). Within TARGETS different perspectives were used for a selective number of future directions to assess global implication in terms of population and health, energy, land- and water-use and biochemical cycles.

In his dissertation, Hoekstra (1998) brought together two lines of thinking in order to apply Cultural Theory's perspectives on water (Hoekstra, 1998b,pp 615):
1. Reasoning along the line of Cultural Theory it was asked: what perspectives on water can be deduced from the theory?
2. Reasoning along the current controversies on water policy issues it was asked: what coherent perspectives may underpin different points of view?

Hoekstra (1998) used these two lines to develop four coherent stories regarding perspectives on water by focusing on (amongst others) water scarcity issues, interbasin and international trade of water, wastewater treatment, groundwater, assessing water availability and issues concerning access to water. In (Hoekstra *et al.*, 1997) the focus is particularly on water policy, global change and different ways in which the distribution between supply and demand can be approached and managed. Following from the three active perspectives (the four perspectives minus the Fatalist) they derived three different water futures and qualitative explorations. The Hierarchist was expected to expect medium trends (for example for climate change), the egalitarian high trends, and the individualist low trends.

Hoekstra (1998) concluded that bringing the aforementioned lines (theoretical assumptions and practical controversies) together was a job that could be done reasonably well , without deviating from the main assumptions of Cultural Theory and without under representing the prevailing controversies. The controversies among water researchers and policymakers in those days could be explained from the existence of different cultural perspectives. It seems easier to understand different opinions in the debate on water if basic attitudes and beliefs of people are taken into account. The importance of different values attached to water varies from society to society, from time to time, from specific historical backgrounds, cultural heritage, and the socio- economic conditions (Hoekstra, 1998b). Hence, from a scientific point of view, it would according to

Hoekstra (1998b) be advisable to involve different perspectives in development studies. An additional argument for doing so is that Hoekstra (1998b) found that basic assumptions and perceptions influence outcomes of tool analyses probably more than anything else does.

Within the framework of the IRMA-SPONGE program (IRMA - SPONGE program, 1999; van Asselt *et al.*, 2001; Middelkoop *et al.*, 2004) the three active perspectives from Cultural Theory were used to develop integrated scenarios for water management. Three different water management styles were evaluated under different perspectives futures, showing costs, risks and benefits of different strategies preferred by different perspectives, resulting in so called dystopias and utopia's (van Asselt *et al.*, 2001; Middelkoop *et al.*, 2004). Utopias refer to viable ways of life wherein worldviews and management style correspond. Dystopias refer to situations in which a worldview of perspective X is mixed with a management style of culture Y or B.

In 2006 the Dutch one-year's BSIK project 'Perspectives in Integrated Water Management' started (Valkering *et al.*, 2008b) which was generally approached as a follow up of the aforementioned IRMA-SPONGE project. The aim of this project was to develop sustainable water management strategies involving social uncertainties. The three perspectives of Cultural Theory were used to explore these social uncertainties and social support for different future water management strategies. In 2008 the Deltares project 'Perspectives in Integrated Water Resources Management in River Deltas' started. The project has three main objectives: 1. to assess the vulnerability of river deltas for global change, 2 to develop a method to identify robust and flexible adaptation strategies in river deltas under uncertainty, taking into account different possible and integrated scenarios for the physical, socio-economic and social system; and 3 to provide recommendations on how to use this method to define robust and flexible strategies for the river deltas. Robust water management strategies are able to cope with uncertainties in the physical environment (like increased discharges due to climate change) and uncertainties in the social environment (changing perspectives on water and changing support for strategies and their consequences). Astrid Offermans devotes her dissertation to the role of perspectives and perspective change for water management.

7.1 Measuring perspectives

In the 1980s perspectives became increasingly important in the field of risk research. In 1990 Dake (1991) introduced a measurement instrument that is now largely used in quantitative studies on Cultural Theory and risk (Dake, 1991; Rippl, 2002). In general it seems that while the principles of Cultural Theory have been influential, its application has been limited (Rayner, 1992). In this section I gave myself the task to give the reader a short overview of efforts being done to operationalize and measure perspectives. It is not my intention to be complete in this effort. Way more I provide the reader with a balanced overview of studies or methods that either confirm or reject assumptions from Cultural Theory.

According to Marris *et al.* (1998) it was Karl Dake (a graduate student of Wildavsky) who conducted the majority of the empirical work on operationalizing and measuring perspectives/ ways of life with regards to risk. His measurement instrument is comparable to a questionnaire consisting of questions on a five point likert scale. The answers to these questions result in a score between one and five for each cultural bias for each respondent (Marris *et al.*, 1998; Rippl, 2002). People were classified in a given perspective if their score for that perspective was above the mean, whereas the scores for the other perspectives were below the mean scores (Marris *et al.*, 1998). To construct his questionnaire, Dake took items from several instruments that were originally developed to measure personal attitudes towards for example confidence in institutions, patriotism, law, and order. By doing so, he mainly addressed cultural biases which are only one part of ways of life. The role of social relations is ignored (Rippl, 2002). Respondents were expected to have a high score for one particular cultural bias and a low score for the three others. However, only 41 respondents (32%) could clearly be classified to one single bias. 80 respondents (62%) were a mix of two or more cultural biases, as they had an above- average score for more than only one cultural bias. Four respondents (3%) scored for all the biases below mean, which means – according to Dake- that they had no cultural bias at all (Marris *et al.*, 1998). We would prefer to suggest that people's biases can be characterized by combinations of cultural biases as well. This gives more credit to Thompson *et al.* (1990) and Douglas (1970) who argue that most people adhere to more than one cultural bias. Marris *et al.* (1998) showed that 94% of the respondents indeed answered in line with Cultural Theory (in the expected direction), however most of the results did not turn out to be significant.

There are two main points of criticism which are often heard within the scientific community regarding Cultural Theory and Dake's risk research. One of them is focuses on the reliability of the formulated questions. Some argue that the questions are biased towards Egalitarism (Marris *et al.*, 1998) or that different cultural biases were not clearly enough distinguished in the questionnaire (Marris *et al.*, 1998). The latter may be the reason why Individualism and Hierarchism correlate according to the results of Dake. This is surprising since Hierarchism and Individualism do not share a grid- or group dimension and should therefore correlate negatively. Also, Individualism correlated positively with trust in the government whereas Hierarchism correlated positively with trust in companies. A next aspect regarding the reliability of Dake's instrument is the significant correlation between all four biases with socio-economic variables such as age and education (Marris *et al.*, 1998). The question becomes then whether Dake is really measuring personal attitudes in a valid way or he is (also) measuring socio- economic variables. The second group of criticism stems from application scales. Even after modifying Dake's questionnaire it could hardly be used to categorize individuals according to their cultural bias. It could only be used to measure worldviews at a collective level; and even then the socio-economic variables seem to have the largest explanatory value in the analysis (Marris *et al.*, 1998). According to Rippl (2002) however, Dake's individual-level measurement instrument does not measure culture but processes that are connected to culture.

Besides Dake, more researchers did an effort to operationalize and measure ways of life. One of these are Meader *et al*. (2006) following Stern *et al*. (1993) they distinguished 3 value orientations with regards to the use of cars: biospheric (towards environmental consequences of car use) social (towards social consequences or car use like the danger of accidents) and egoistic (towards increased comfort while travelling). Their initial assumption was that Hierarchists will try to combine these three orientations, egalitarians will try to optimize biospheric values, individualist will optimize egoistic values and diminish biospheric and social values. Fatalists were not assumed to have any preference. These assumptions are not in line with Cultural Theory since they state that Individualists oppose both Hierarchists as well as egalitarians. According to Cultural Theory Individualists share a grid dimension with egalitarians and hence have aspects in common. Because of this inconsistency it is not very surprising that the results suggested that the content of the four worldviews do not generalize across cultural, environmental and economic issues. Meader *et al*. (2006) however interpret these results as proof for saying that Cultural Theory is more an anthropological theory of social organization rather than psychological theory of individual types.

O'Riordan and Jordan (1999) did a survey among residents of Norwich in the United Kingdom. Respondents were sampled statistically for representativeness. The study consisted of two phases; in the first phase respondents had to answer questions regarding cultural solidarities, in the second phase the researchers' goal was to assess fairness rules for hypothetical situations. Ideally, respondents who could be assigned to a particular perspective in the first phase, could be assigned to the same perspective according to results from the second phase. This was true for 23% of the respondents, besides, for almost all respondents and groups there was a high level of unanimity within the groups, and huge divergence between the groups. The latter finding is a tribute to Cultural Theory (O'Riordan & Jordan, 1999). They concluded that Cultural Theory, if gently applied and not too strictly pursued, may at least help to explain how certain patterns of thinking may shape the communication, information gathering and interpretative aspects of topics like climate change (O'Riordan & Jordan, 1999).

Whereas the researchers mentioned before included the fatalistic perspective in their measurement instruments, Pendergraft (1998) decided to exclude Fatalism in his study. This decision was mainly based on his skepticism regarding the question whether Fatalists would respond to surveys at all. According to him, studying Fatalists and Hermits demands specialized ethnographic methodologies of data collection rather than using statements combined with cultural indices as he did. Pendergraft (1998) identified 33 possible correlations (consisting of eleven statements with three cultural indices each). All of these correlations were in the expected direction and 32 of them were statistically significant at less than 0.01 (P) level. For example, it was expected that respondents scoring high on Egalitarism also would express higher levels of concern, and they did. Examples of statements are: 'If I had to choose between freedom and equality I would take equality' and' humans have no innate or God-given mandate to dominate the planet'. Some statements however were formulated in a way that makes drawing conclusions rather hard (weak reliability). An example of such a statement is 'Our food supply, due to modern agricultural methods, is better and safer than ever before'. A negative reaction to this statement does not tell us much since it stays unclear whether the respondent does not agree with the important role of modern agricultural methods, with food supply being more safe, with food supply being better than before, or with all aspects.

Each answer possibility to each statement was assigned points for the three active perspectives. Then each respondent's points for each culture were summed, and the percentage of the respondent's total score composed by each culture was calculated. Respondents with similar scores were classified in three different clusters. In no cluster Hierarchism was strongest (see table 3). Even though most worldviews appear to consist of a combination of all perspectives, preferences for one of the

perspectives could be recognized. Most respondents who scored highly for hierarchism, also scored highly for Individualism. Summarized there appeared to be a melding of Hierarchism and Individualism in opposition to Egalitarian values (Pendergraft, 1998). Pendergraft states that it is not clear whether this is due to an invalid measurement or a power balance wherein Hierarchism and Individualism reinforce each other against Egalitarism. Furthermore, demographic characteristics such as age, education, gender, race and place of residence seemed to influence one's attitudes (Pendergraft, 1998).

Table 3: strength of each cluster, adopted from (Pendergraft, 1998,pp.655)

Cluster	N	Hierarchism	Egalitarism	Individualism
1	103	0.402	0.172	0.426
2	199	0.307	0.327	0.365
3	139	0.232	0.510	0.258

Where Pendergraft (1998) concludes that different worldviews (or combinations of worldviews) do correlate with differences in concern regarding risk factors, Oltedal and Rundmo (2006) conclude that individuals with different worldviews do not perceive (transport) risk according to the patterns described in Cultural Theory. They adopted 23 items from Dake's measurement instrument and added new items who were supposed to be better applicable to transportation safety issues. The primary objective of this research was to find groups of similar respondents wherein individuals were allowed to adhere to more than only one worldview. Eventually, four clusters were made and the relation between cultural bias and risk perception seemed somewhat sporadic and unsystematic. Hence Oltedal and Rundmo (2006) concluded that there must be other factors which are more important for transport risk perception than the perspectives from Cultural Theory (Oltedal & Rundmo, 2006).

Another questionnaire study from Steg and Sievers (2000) however, concluded again that myths of nature do influence more specific environmental beliefs. Also their results showed that environmental beliefs and policy preferences (push- and pull measures and a necessity of the reduction of car use) correlate in the expected direction. For example, people who's environmental belief could be characterized by 'nature ephemeral' (egalitarian) tended to have a preference for a reduction in car use. Respondents characterized by 'nature is benign' (individualist) clearly had a much less strong preference for this policy option but instead preferred pull strategies and (to a lesser extend) push strategies, which can be approached as regulation by a (partially) free market. In general, nature ephemeral (Egalitarism) was associated with a higher problem awareness. Steg and Sievers (2000) hence agree with Stern *et al.* (1995) stating that value orientations, general beliefs and worldviews influence specific beliefs, attitudes, and norms. However, they do not necessarily directly relate to behavior (Steg & Sievers, 2000).

Cultural Theory starts from a value orientation system wherein perspectives are more or less fixed in their outreach and extreme reference points are described. The assumption is that historical, current, but also future perspectives can be located somewhere in the group- grid diagram. A method which is often used in social sciences and which has a rather different starting point, is Q-methodology. Here, researchers start with a list of statements (sometimes questions or a sum up of different values) which needs to be completed, filled in or ranked by respondents. A next step is clustering of the different answers given by the respondents and simultaneously the formation of categories. The categories resulting from Q-methodology do not describe a wide range of (sometimes extreme) reference points but the differences and reference points of and between the respondents who filled in the questionnaire. According to my insights, this may be a very valuable method if scientific

knowledge about categories of value orientations is missing, or if the main research goal relates to a description of current preferences and value orientations existing in a group of people. If the main goal relates to an exploration of future behaviour, value orientations, support et cetera, I consider Q-methodology less valuable. Describing present- date perspectives (which is very timely bound) does not guarantee that these categories will be enough to also describe and explain changing and future perspectives. For that we prefer a typology based on theories and long(er) term research.

In general it can be said that no unambiguous conclusion can be drawn when it comes to the suitability of Cultural Theory regarding its operationalization or verification by quantitative research methods. Some research confirms assumptions from Cultural Theory, others reject. The same is true for the question whether Cultural Theory (which was essentially developed to apply to a large social aggregate) can be used to analyze individual value orientations and responses. Some answer this question confirmative (for example (Renn, 1992; Pendergraft, 1998)), others reject (for example (Meader *et al.*, 2006; Oltedal & Rundmo, 2006). Most researches seem to agree that prototypes are hardly found, hence it seems better to interpret the four perspectives as extreme reference points. The focus should be on mixtures of worldviews and the generation of better insight about who might adopt to which worldview in what circumstances and which aspects of worldviews are, or are not exclusive (Wildavsky & Dake, 1990; Marris *et al.*, 1998; Pendergraft, 1998). Pendergraft (1998) expresses this by stating that cultural diversity on individual and higher levels is an important element of what has been called social plasticity.

As for all research, it is fundamentally important to develop a measurement instrument that is valid and reliable. The validity of a questionnaire or instrument can be calculated by means of the so called Cronbach's Alpha which is a measure for the internal consistency of items in a questionnaire and which has a value between zero and one. The closer to one (usually as from 0.7) the higher the validity of the test. It measures to what extend the separate items in a questionnaire measure the same underlying concept (in our case: perspectives). Reliability has –amongst others- to do with interpretation (am I measuring what I think I am measuring and do the respondents understand my questions and answer options?), with sampling issues (is my sample divers, random and large enough to be able to draw (general) conclusions?), and the correct formulation of questions (for example, not asking two questions in one). Not taking (enough) into account the reliability and validity of a test can severely effect results.

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