SC-Design

Course Instruction

Manual

Social Cohesion Design Foundation, Delft, The Netherlands
Clemens de Lange (MSc)
in collaboration with the
Faculty of Industrial Design Engineering,Technical University Delft,The Netherlands

The Ibieca Case...

During the early 1970s, running water was installed in the houses of Ibieca, a small village in northeast Spain. With pipes running directly to their homes, Ibiecans no longer had to fetch water from the village fountain. Families gradually purchased washing machines, and women stopped gathering to scrub laundry by hand at the village washbasin.
Arduous tasks were rendered technologically superfluous, but village social life unexpectedly changed. The public fountain and washbasin, once scenes of vigorous social interaction, became nearly deserted. Men began losing their sense of familiarity with the children and donkeys that once helped them haul water. Women stopped congregating at the washbasin to intermix scrubbing with politically empowering gossip about men and village life. In hindsight the installation of running water helped break down the Ibiecans' strong bonds—with one another, with their animals, and with the land--that had knitted them together as a community...

Description

Course Contents
A product designer according to the definition of Industrial Design Institutes is a person that develops a product from initial idea to the full sets of specifications needed for production. A product designer has a background in design processes, engineering and user-product interaction.Designers are typically not educated to include social cultural values such as property, trust, social cohesion, safety, environment awareness and emancipation in their design process.

Social Cohesion Design Foundation (SCDF)
The Social Cohesion Design Foundation (SCDF see Appendix 3) in Delft aims at developing and promoting design that enhances aspects of social cohesion. For this, the foundation developed the course: Social Cohesion Design. Key issue in this elective is the question: can industrial designers actually create a new social reality? Can industrial designers actually design products/services that effectively enhance aspects of social cohesion?

Study Goals

1. The student is capable of reflecting on design as a potential driver for social cohesion;
2. The student is capable of analysing and integrating aspects of social cohesion into a design vision;
3. The student is capable of translating his/her vision into a social cohesive product concept;
4. The student is capable of proposing an implantation of the concept in the user context, envisioning a new social reality;

Education Method
Students have to elaborate on a case as initiated by SCDF in Delft, The Netherlands. The case is dealt with by teams of 3-5 students. The course-event comprises of 3 main Phases.

Phase 1 Identification: context and social cohesion analysis resulting in a definition & vision for a new social cohesive reality;

Phase 2 Integration: translating the vision into a design concept;

Phase 3 Implantation: developing an implementation strategy for the design concept. The project is concluded with 3 D design mock-ups, live presentation, written reports and a public exposition.

Coaching and tutoring
Depending on the number of teams each team will receive intensive face to face contact meetings. Each week will be introduced by a lecture and group debate. Guest speakers on various issues (Q Methodology, sustainability, branding, etc.) are invited to give lectures.

Assessment
During the elective the students will receive a mark for each phase.
The endmark is the average outcome of these 3 marks.

The "Wise Owl Award" event.
The endpresentation is held in a public venue within the framework of "The Wise Owl" Award event. Students present their results for a expert-, and public jury.

Planning

i-1 Identification	**i-2** Integration	**i-3** Implantation
Week 1 Tu 19 April Kick off SC-Design Introduction **Selecting Setting X, Actors & Elements**	Week 4 Tu 10 May Sustainability lecture ('Cradle to Cradle') **Selecting + Modification Sub-Scenarions (Team)**	Week 7 Tu 31 May Lecture Business,Branding & Promotion **Business, Branding & Promotion**
Week 2 Tu 26 April Q Lecture & Workshop **Q Sort: SC Mission** Team aims at improving specific aspects of SC in Setting X	Week 5 Tu 17 May Harris (H) Combi lecture **H Co-Valuation** Team evaluates sub scenarios with client and actors	Week 8 Tu 7 June Likert (L) Lecture **L Final Vision** Team evaluates SC-Mission and concludes final Vision Statement
Week 3 Tu 3 May Philosophy lecture (e.g. Heidegger) **Writing Sub-Scenarios (Individual)** Thu 10 Mei Team presentations Handing In Draft Report	Week 6 Tu 24 May Feedback Lecture **Concept** Thu 26 May Team presentations Handing In Draft Report	Week 9 Tu 14 June Feedback lecture **Vision** Thu 16 June Team presentations Handing In FINAL REPORT

SC-Design 3-i Card / Planning 19 April - 23 June 2011   **Thu 23 JUNE FINALS SPEAKERS**

Step 1 Week 1

Organise SC-Design Team
Analyse Assignment (see Appendix 1)
Choose setting X, Identify Actors, Elements & Events

Setting X is a sample taken from the community in which the technology is to be implemented.
Setting X consists of elements (e.a. copymachine, toilets, staircase, offices, service desk, video screens, speakers, etc. present at the setting X). Actors consist of employers, employees, cleaning personal, etc. For setting X 'Fields of Opportunity' are identified: Potential events that may take place when certain elements in the Setting X are included in the technology design. Elements and their 'Fields of Opportunity' are distributed to the students to start writing Sub Scenarios.
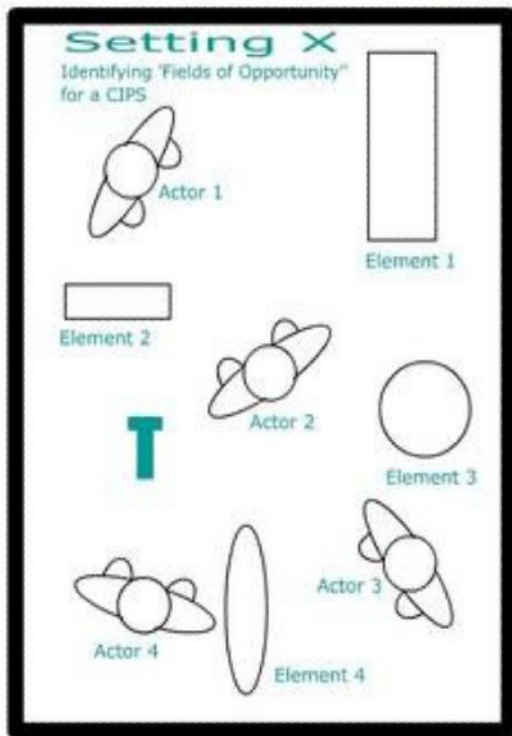
Individual elements will be distributed among team members to generate Sub Scenarios.
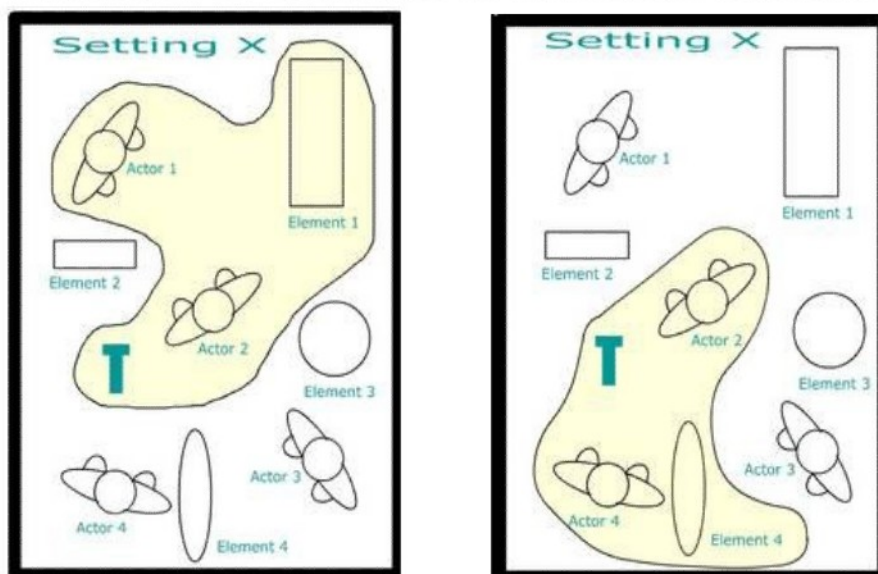
Build 3D Scenario Board

Fig. 2 Students from last years assignment discussing impact of their technology design on social interaction in a slum settlement.

Step 2 Week 2

Conduct research into SC-perception. Apply Q Methodology and Factor Analysis. Define SC mission.

Q methodology / Theory outline

For further study material for Q Methodology theory see references Appendix 3.

Q methodology provides a foundation for the systematic study of subjectivity, a person's viewpoint, opinion, beliefs, attitude, and the like (Brown 1993). Typically, in a Q methodological study people are presented with a sample of statements about some topic, called the Q-set. Respondents, called the P-set, are asked to rank-order the statements from their individual point of view, according to some preference, judgement or feeling about them, mostly using a quasi-normal distribution. By Q sorting people give their subjective meaning to the statements, and by doing so reveal their subjective viewpoint (Smith 2001) or personal profile (Brouwer 1999).

Fig. 10 Laying the Q sort

These individual rankings (or viewpoints) are then subject to factor analysis. Stephenson (1935) presented Q methodology as an inversion of conventional factor analysis in the sense that Q correlates persons instead of tests; "[w]hereas previously a large number of people were given a small number of tests, now we give a small number of people a large number of test-items". Correlation between personal profiles then indicates similar viewpoints, or segments of subjectivity which exist (Brown 1993). By correlating people, Q factor analysis gives information about similarities and differences in viewpoint on a particular subject. If each individual would have her/his own specific likes and dislikes, Stephenson (1935) argued, their profiles will not correlate; if, however, significant clusters of correlations exist, they could be factorised, described as common viewpoints (or tastes, preferences, dominant accounts, typologies, et cetera), and individuals could be measured with respect to them.

'Concourse'

Statements forming the Q sort are selected from the so called 'Concourse': a collection of perceptions, opinions, expressions and so on associated with a certain topic. In this case: Social Cohesion. The concourse can be collected from:
1. Newspapers, magazins, TV, observations, interviews and son on, or constructed from:
2. Theory available on the topic. The concourse and the Q sort statements for the SC-Design course have been generated from the three dimensions of Social Cohesion theory, Sense of Belonging, Face to Face contacts, and Social Capital. For each of the three dimensions 8 statements have been formulated (see under).

Factor Analysis / Theory Outline

For further study material for Factor Analysis theory see references Appendix 3.

Factor analysis is a statistical method used to describe variability among observed variables in terms of a potentially lower number of unobserved variables called factors. In other words, it is possible, for example, that variations in three or four observed variables mainly reflect the variations in a single unobserved variable, or in a reduced number of unobserved variables. Factor analysis searches for such joint variations in response to unobserved latent

The factors resulting from Q analysis thus represent clusters of subjectivity that are operant, i.e., that represent functional rather than merely logical distinctions (Brown 1993; 2002[b]). "Studies using surveys and questionnaires often use categories that the investigator imposes on the responses. Q, on the other hand, determines categories that are operant" (Smith 2001). A crucial premise of Q is that subjectivity is communicable, because only when subjectivity is communicated, when it is expressed operantly, it can be systematically analysed, just as any other behaviour (Stephenson 1953; 1968).
The results of a Q methodological study can be used to describe a population of viewpoints and not, like in R, a population of people (Risdon et al. 2003). In this way, Q can be very helpful in exploring tastes, preferences, sentiments, motives and goals, the part of personality that is of great influence on behaviour but that often remains largely unexplored. Another considerable difference between Q and R is that "Q does not need large numbers of subjects as does R, for it can reveal a characteristic independently of the distribution of that characteristic relative to other characteristics.

Social Cohesion / Theory Outline

For further study material for Social Cohesion theory see references Appendix 3.

Many definitions have been formulated for the concept of Social Cohesion. They all are vague and hardly operationable for designers. What does it mean for instance that Social Cohesion is defined as the'glue'that holds members of a society together. Typically sociologists recognise three main dimensions within the concept of Social Cohesion: Sense of Belonging, Face to Face contacts (sharing of the same physical space), and Social Capital formulated as an economic aspect of Social Cohesion.

Sense of Belonging

Belonging includes the person's fit with his/her environments and also has three sub-domains. Physical Belonging is defined as the connections the person has with his/her physical environments such as home, workplace, neighbourhood, school and community. Social Belonging includes links with social environments and includes the sense of acceptance by intimate others, family, friends, co-workers, and neighbourhood and community. Community Belonging represents access to resources normally available to community members, such as adequate income, health and social services, employment, educational and recreational programs, and community activities.

Face to Face

Researchers at McGill University found that it takes less than a day of no normal contact with the outside world for an adult to start hallucinating.

Even when it's not such drastic circumstances, talking to a live person can give us a surge of energy in the middle of the workday. "In-person contact stimulates an emotional reaction," says Lawrence Honig, a neurologist at Columbia University. Bonding hormones are higher when people are face-to-face. And some scientists think that face-to-face contact stimulates the attention and pleasure neurotransmitter dopamine, and serotonin, a neurotransmitter that reduces fear and worry.

Social Capital

Social capital is a sociological concept used in business, economics, organizational behaviour, political science, public health and the social sciences in general to refer to connections within and between social networks. Though there are a variety of related definitions, which have been described as "something of a cure-all" for the problems of modern society, they tend to share the core idea "that social networks have value. Just as a screwdriver (physical capital) or a college education (human capital) can increase productivity (both individual and collective), so do social contacts affect the productivity of individuals and groups".

Based on these 3 dimensions of the Social Cohesion Concept (Face to Face , Sense of Belonging, Social Capital) 23 statements have been selected covering the topic of Social Cohesion. These specific statements can be used to develop a Social Cohesion Design Mission.

I find it pleasant that I can drop in at a colleagues office without making an appointment first.

I know my colleagues pretty well.

I like to tell about my work at home or to friends. They know quite well what my work is about.

I would like to know more about the personal interests of my colleages. What kind of hobbies they have.

I do not have a clear picture of how my work fits in the overall vision and mission of the organisation.

I feel there should be more informal events at my department to get to know each other both on a professional and personal level.

When my colleague has been absent for more than 1 day I ask around the administartion what's going on.

When I am sick I find it pleasant when colleagues call me and ask me how I am doing.

When I receive a lot of feedback on my work and from colleagues it makes me feel important and valued.

Personal, face to face contact is crucial for my wellbeing. There are not enough 'human moments' in my opinion.

I think that we can work much more efficient when we have more contact on a personal level.

I would like to be more involved in the overall policy making.

I prefer E-mail contact to face to face contact because it is time saving and to me time is very precious.

I have more social contacts at work then in my private life.

I see myself first of all as a professional who does his job, and only secondly as a member of the organisation.

I prefer working at home because I feel less controlled by others.

I feel very much at ease at work. It's a cosy place and i regard my colleagues as my friends.

It's very easy to take initiatives with others to start new projects. It does not take a lot of preparation and paperwork.

I feel I am treated very much equal to the others.I don't sense a considerable hierarchy within the institute.

In my office I feel a bit like a prisoner locked up in his cell from 9-5. I had rather work in an open space with others and be more free to determine my hours.

My department is quite isolated from the others. I have hardly any idea what is going on at the other departments.

I feel like the institute is a big 'family' and I find a lot of solidarity among my colleagues. When I have problems, also personal, I can discuss them with my colleagues.

I feel free to invite my family to my workplace and introduce them to my colleagues.

SC-Design Toolkit

For this course the SCDF developed the SC-Design toolkit containing:

SC-Design manual;
Setting X ground plate. The 3D Sceanrio maquette of Setting X that has to be designed in the first phase, Identity phase has to be build for a standard size ground plate:
SC-Design Q board. The Q sort has to be conducted, offering the SC-Design Q board and the Q sort statements to the respondents in Setting X.
Q sort statements (23);
SC-Design 3-I planning card;

Fig.4 The SC-Design Tool Kit. It contains the Q board,
The Q set, the 3D Scenario ground board and the Instruction manual.

Step 3 Week 3

Develop Sub Scenarios on Individual basis.

Fig. 5 Contemplation

Scenarios / Theory Outline

For further study material for Scenario theory see references Appendix 3.

A Scenario in SC-Design is the description, visual and/or textual, of a number of events as envisioned to be happening in a certain time frame between actors as a consequence of a new Technology implant.
A Sub Scenario is considered as the envisioning of event(s) to be happening between actors and one or two elements in Setting X.
The Main Scenario is considered as the envisioning of the events that take place between actors, when all Sub Scenarios are assembled into one integral design in Setting X.

Scenarios
Scenarios evoke reflection in the content of design work, helping developers coordinate design action and reflection. Scenarios are at once concrete and flexible, helping developers manage the fluidy of design situations. Scenarios afford multiple views of an interaction, diverse kinds and amounts of detailing, helping developers manage the many consequences entailed by any given design move. Scenarios can also be abstracted and categorized, helping designers to recognize, capture, and reuse generalizations, and to address the challenge that technical knowledge often lags the needs of technical design. Finally, scenarios promote work-oriented communication among stakeholders, helping to make design activities more accessible to the great variety of expertise that can contribute to design, and addressing the challenge that external constraints designers and clients often distract attention from the needs and concerns of the people who will use the technology.

Elements
Scenarios have characteristic elements. They include or presuppose a setting: Scenarios also include actors: human activities to include several to many actors. Each actor typically has goals or objectives. These are changes that the actor wishes to achieve in the circumstances of the setting. Every scenario involves at least one actor and at least one goal.

Actors
When more than one actor or goal is involved, they may be differentially prominent in the scenario. Often one goal is the defining goal of a scenario, why did this story happen? Similarly, one actor might be the principal actor, the answer to the question who is this story about? Scenarios have a plot; they include sequences of actions and events, things that actors do, things that happen to them, changes in the circumstances of the setting, and so forth.

Events
Particular actions and events can facilitate, obstruct, or be irrelevant to given goals. Representing the use of a system or application with a set of user interaction scenarios makes that use explicit, and in doing so orients design and analysis towards a broader view. It can help designers and analysts to focus attention on the assumptions about people and their tasks that are implicit in systems and applications. Scenario representations can be elaborated as prototypes, through the use of storyboard, video, and rapid prototyping tools. They are the minimal contexts for developing user-oriented design rationale: a given design decision can be evaluated and documented in terms of its specific consequences within particular scenarios. Scenarios and the elements of scenario-based design rationale can be generalized and abstracted using theories of human activity, enabling the cumulation and development of knowledge attained in the course of design.

Step 4 Week 4

Select & Modify most promising Sub Scenarios as a Team.

Step 5 Week 5

Co-Value Sub Scenarios with Actors and Client. Apply Harris Profile Methodology.

Harris Profile / Theory Outline

For further study material for Harris Profile theory see references Appendix 4.

A New Product Profile (or Harris Profile) is a graphic representation of the strenghts and weaknesses of design concepts. Originally, a New Product Profile is applied as a useful tool to evaluate and select development projects (ideas for new business activities).Per design alternative a Harris Profile is created. A number of criteria is used to evaluate the design alternatives. A fourscale scoring is used for all criteria.

Criteria should be selected according to which the design alternatives should be compared (be sure to cover all important aspects of the product development project with the selected criteria).
List the criteria and create a four-point scale matrix next to it. The scale is coded-2, -1, +1, and +2.
Create a Harris profile for the design alternatives you want to compare. Draw the profile by marking the scores in the four-point scale matrix for all the criteria.
When the Harris Progfiles of the design alternatives are completed, the progfiles can be compared and a judgment can be made as to which alternative has the best overall score.
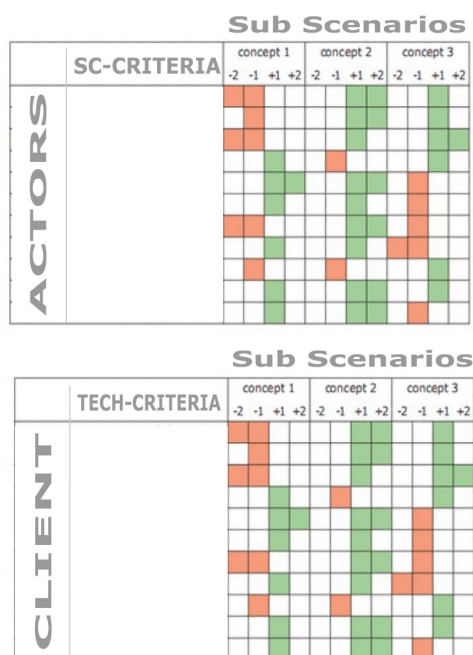

Fig. 6 SC-Design Harris Profile.

Step 6 Week 6

Construct Community Integrated Product System (CIPS)

Step 7 Week 7

Develop Business, Branding & Promotion (BBP) Plan

BBP / Theory Outline

For further study material for BBP theory see references Appendix 4.

A **business plan** is a formal statement of a set of business goals, the reasons why they are believed attainable, and the plan for reaching those goals. It may also contain background information about the organization or team attempting to reach those goals. Business plans may also target changes in perception and branding by the customer, client, or larger community. When the existing business is to assume a major change or when planning a new venture a 3 to 5 year business plan is essential.

A branding plan

Branding describes the process by which entrepreneurs differentiate themselves and stand out from others by identifying and articulating their unique value proposition, and then leveraging it across platforms with a consistent message and image to achieve a specific goal. In this way, enterprises can enhance their recognition as experts in their field, and establish reputation and credibility.

Branding consists of three elements:
. Value Proposition: What does it stand for?
. Differentiation: What makes it stand out?
. Marketability: What makes it compelling?

Promotion plan

Promotion is one of the four elements of marketing mix (product, price, promotion, distribution). It is the communication link between sellers and buyers for the purpose of influencing, informing, or persuading a potential buyer's purchasing decision. The following are two types of Promotion:

Above The Line Promotion: Promotion in the media (e.g. TV , Radio, Newspapers , Internet, Mobile Phones, and, historically, Illustrated songs) in which the advertiser pays an advertising agency to place the ad.

Below The Line Promotion: All other promotion. Much of this is intended to be subtle enough for the consumer to be unaware that promotion is taking place. Examples: sponsorship, product placement, endorsements, sales promotion, merchandising, direct mail, personal selling, public relations,trade shows.

Step 8 Week 8

Evaluate Final Concept with Actors. Apply Likert Scale Methodology for perception of SC-improvement.

Likert Scale Methodology / Theory Main Line

A likert Scale is a psychometric scale commonly used in questionaires, and is the most widely used scale in survey research, such that the term is often used intercangeably with rating scale even though the two are not synonymous. When responding to a Likert questionaire item, respondents specify their level of agreement to a statement. The scale is named after its inventor, psychologist Rensis Likert.

An important distinction must be made between a Likert Scale and a Likert Item. The Likert scale is the sum of responses on several Likert items. Because Likert items are often accompanied by a visual analog scale, the items are called sometimes scales themselves. A Likert item is simply a statement which the respondent is asked to evaluate according to any kind of subjective criteria; generally the level of agreement or disagreement is measured. Often five ordered response levels are used, although many psychometricians advocate using seven or nine levels; The format of typical five-level Likert item is:

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

After the questionaire is completed, each item can be analyzed separately or in some cases item responses yam be summed to create a score for a group of items. Hence, Likert scales are often called summative scales.

Actors Opinion	Likert Scale Items
Strongly disagree -2 Disagree -1 Neutral 0 Agree +1 Strongly Agree +2	Our Final Concept improves SC-Aspect X
Strongly disagree -2 Disagree -1 Neutral 0 Agree +1 Strongly Agree +2	Our Final Concept improves SC-Aspect Y
Strongly disagree -2 Disagree -1 Neutral 0 Agree +1 Strongly Agree +2	Our Final Concept improves SC-Aspect Z

Fig. 7 Likert Scale. Evaluating SC aspects with actors.

Step 9 Week 9

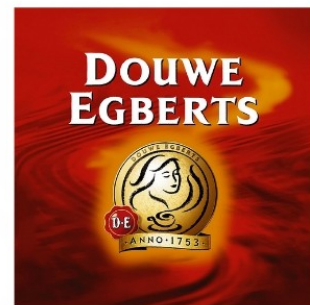## Present Final Concept

Fig.8 Presenting final results.

Appendix 1

The DE Assignment

Rethink the Douwe Egberts Cafétesse System as a potential driver for improvement of Social Cohesion at work.

Explore the Design Space

Develop a new vision for a Community Integrated Coffee Distribution System.

Appendix 2

The Wise Owl Award

**Final results are presented in a public venue in front of jury, media and press.
Winner receives the Wise Owl Award.**

Fig.9 The Wise Owl SC Design Award

Fig.10 Winning team Pamoja of SC Design Course/Competition 2010.

Appendix 3

References

Social Cohesion

Richard E Sclove - Democracy and technology
New York : Guilford Press 1995

Noah E. Friedkin – Social Cohesion
Department of Sociology, University of California, Santa Barbara,
California 93106;2000

Robert Putnam - Bowlin' Alone / The collapse and revival of American community
New York, Simon & Schuster 2000

Tim Reeskens, Sarah Botterman & Marc Hooghe – Is Social Cohesion one latent concept?
Investigating the dimensionality of social cohesion on the basis of the
Kearns and Forrest (2000) typology. Center for Political Research, KULeuven

Scenarios

Mary Beth Rosson and John M. Carroll- Scenario-Based Design
Department of Computer Science and Center for Human-Computer Interaction
Virginia Tech, Blacksburg VA

Campbell, R.L.- Will the real scenario please stand up? Sigghi Bulletin, (24 (2), 6-8
1992

Carroll, J.M. & Rosson. Getting around the task-artifact cycle: How to make clains and design by scenario. ACM
Transaction on Information Systems, 10, 181-212 1992

Clarke, L. The use of scenarios by user interface designers. Cambridge University Press, 103-115. 1991

Q Methodology

Job van Exel ,Gjalt de Graaf - Q Methodology/ A sneak Preview
Erasmus MC, Institute for Medical Technology Assessment (iMTA),
Vrije Universiteit, Dept. of Public Administration & Organisation Science, Faculty of Social Sciences
2005

S.R. Brown, - Q Methodology and Qualitative ResearchQualitative Health Research,
1996

Campbell, T.C. – Investigating structures underlying relationships when variables are not the
focus: Q – technique and other techniques, paper presented at the Annual Meeting of the
American Educational Research Association, San Francisco, April 1995

Iliescu, D. – Q methodology, Ed. Comunicare.ro, Bucharest, 2005, p. 7, 11, 76, 78 -79, 82

Kramer, B., Hegedus, P., Gravina, V. - Evaluating a Dairy Herd Improvement Project in Uruguay
to Test and Explain Q Methodology, Proceedings of the 19th Annual Conference Raleigh, North
Carolina, USA, 2003, p. 347

Kufeld, C. – A Q –methodological study investigating the identity self – descriptions of a group of
ex- smokers, Dissertation Research Project, University of Luton, p. 19