

Youth, gender and SET in media (WP2)

Anita Thaler

Final report: December 18th 2009

Acknowledgement

“MOTIVATION – Promoting positive images of SET in young people under gender perspective” was a Coordination Action funded by the European Commission in the 7th Framework Programme "Capacities". The following persons contributed with their work to the success of MOTIVATION: Felizitas Sagebiel (coordination) and Jennifer Dahmen (Germany), Anita Thaler, Lisa Scheer, Sabine Stockinger, Christine Wächter and Magdalena Wicher (Austria), Anne-Sophie Godfroy-Genin and Cloé Pinault (France), Nataša Urbančikova and Gabriela Kolvekova (Slovakia), Els Rommes (The Netherlands), Carme Alemany (Spain) and Bulle Davidsson (Sweden). Further Christina Schultes (Germany), Magdalena Wicher, Sabine Stockinger and Lisa Scheer (Austria), Karen Mogendorff, Mariska Schönberger, Jaqueline de Weerd and Kristel van Hooren (The Netherlands) have been involved in the project progress.

This report is the final report for the work package (WP2) “Youth, gender and SET in media” written by Anita Thaler, leader of the respective work package.

Content

1. Summary	4
2. Introduction: SET and gender in youth magazines and soap operas	4
3. Methodology	6
3.1 Aims and objectives	6
3.2 Quantitative and qualitative analysis of youth magazines	6
3.3 Magazine analysis sample	8
3.4 Qualitative and quantitative soap opera analysis	8
3.5 Soap opera analysis sample	9
4. Results and interpretations	10
4.1 Quantitative magazine analysis	10
4.2 Country-specific magazine analysis	13
Austria	13
France	14
Germany	14
The Netherlands	15
Slovakia	15
4.3 Quantitative soap opera analysis	16
4.4 Country-specific soap opera analysis	16
Austria	16
France	17
Germany	18
Netherlands	18
Slovakia	19
Spain	19
Sweden	20
5. Reflection of methodology	20
6. Conclusions and interconnections	21
7. Recommendations	24
References	27
Annexe	32
WP2 media analysis: youth magazine analysis document	33
WP2 media analysis: Soap SET scene analysis sheet:	35

1. Summary

A presupposition of work package 2 (WP2) is, that job choices of young people are among other things influenced by media representations of jobs and job features, hence popular media can be seen as today's informal vocational counsellors for young people. In this work package two youth relevant media fields have been analysed: TV series (soap operas) and print media (magazines), which are mostly used by young people in their leisure time, and therefore can be interpreted as informal education areas. Movies, television series, music clips, commercials and magazines mirror social reality and they construct culturally dominant images and influence implicitly young people's attitudes and to a certain extent study choices as well.

In a first phase of the project, in 2008, the consortium explored print media and analysed images of science, engineering and technology (SET) in general and images of SET with a gender focus in particular. For instance we asked what kind of photos and other pictures are representing SET.

In the second project phase, in 2009, the consortium analysed SET-scenes regarding gender in TV. Our special focus lay on "soap operas", because from youth studies it is known, that especially young women watching daily soaps regularly.

A confirmed assumption of WP2 is that especially technology actually plays an important role in young people's lives. Therefore, the expectation that those technological devices are part of media representations has been met as well. But although youth media have lots of different possibilities to embed SET as meaningful topics only few producers use this chance. Most youth media represent SET in an accessory-style and the message seem to be is that possessing is more important than using and understanding (technology).

2. Introduction: SET and gender in youth magazines and soap operas

So far, gender-focused media analysis mainly concentrated on either quantitative analysis of gendered media usage (Medienpädagogischer Forschungsverbund Südwest 2007, Grossegger 2005) or on qualitative analysis of men and/or women in media (for instance European Commission 1999), but without the very important analysis of SET and gender in media. Especially youth magazines were often analysed with a gender perspective. For instance Mühlen Achs (1996) criticized the youth magazine's focus on so called "special female needs"; Chagheri (2005) could show in her feminist-linguistic analysis that the description and pictures of women in two German youth magazines can not be recognized as emancipatory. And Herrmann (1999) explored also a German teenage girls' magazine and blames it for reinforcing the myth of femininity.

However, past research on SET and gender in media – the focus MOTIVATION has – addressed only the role of female scientists or generally gender and SET professions (see for instance Griffin et al. 1994, Wasburn 2004, Flicker 2005, Bulck & Beullens 2005, Whitelegg et al. 2006), but missed the general focus on images of SET in youth media.

The idea behind WP2's general focus on images of SET (and the question of their genderedness) is that relevant SET image shaping information is not only connected to shown scientists or engineers. And moreover, vocational and educational choices are not only based on explicit representations of SET professions and professionals. The various faces of SET images are constructed incidentally while different forms of SET are presented. And those

images influence educational and professional choices in both ways, intentional and incidental (Thaler 2009, 2010). That means, beside formal education at school young people get lots of information and gain knowledge by using various media in their leisure time. Pupils learn much (and not always intentionally) while reading magazines, watching TV, communicating in the internet, playing games or collaborate in the virtual world (Thaler 2008). This is often interpreted as an indicator for the relevance of IT agency and media literacy through youth media (Universidad Autonoma de Barcelona 2007). But where is the gender competence in those agency and literacy concepts? Especially spare time media, like TV, internet and computer games conceal much implicit gendered information, for instance about IT (see for instance Rommes 2002) and engineering as a gendered – masculine connoted – topic. One key question is: Why do still so few women consider a job in science, engineering and technology although so many measures and initiatives are aiming at “young women in SET”? Can gendered SET images in youth media explain a part of that question? (see also Thaler 2010)

Another important factor of the MOTIVATION project is the cultural diversity of the seven involved countries. There is certainly no homogeneous youth group in one country, and there is even less homogeneity across the different countries. For instance school systems, languages and media differ. We knew, even if we would find comparable youth magazines and soap operas in each country, they would not necessarily have the same importance for young people in every country. Therefore each partner started with a literature research and quantitative analysis of youth context variables in general and youth media in special. And we actually found interesting country differences, but sometimes it is not so much the content but more the methodology. For instance some statistics are not gendered; then youth is a broad term and is defined very differently. Beate Grossegger (2005) sets the subjective beginning of youth at 12 years and the end between 20 and 30 years. For instance Austrian youth research sets three age groups, the shift from childhood to youth (so called “kids”) between 10 and 14 years, the classical youth group between 14 and 19 years and young adults between 20 and 24 or 20 and 30 years (ibid.).

In our attempt of comparing how important TV watching and magazine reading is for nowadays youth, we found very different information, regarding age but also regarding the questions; how often do teenagers watch TV is not the same as the question how popular TV watching is for them.

In Austria, we found data about popular leisure activities of females and males between 15 and 19 years (Thaler 2008a). Watching TV is the third most popular activity of Austrian youth, only “listening to music” and “doing something with friends” is more popular. Reading magazines is an activity with a greater gender difference, 71.6% of girls and 55.6% of the boys like to read them. And about two third of Austrian girls and boys like internet surfing (Grossegger 2006). In France and Spain, statistics are made on an activity journal base, therefore we know, French teenagers spend about two hours daily with TV, reading is with a quarter of an hour one of the less popular leisure activities of 15-17 year old girls and boys (data extracted from Médiamétrie, Observatoire des usages Internet, 3ème trimestre 2005, as quoted in Pinault 2008a). In Spain 15-19 year old boys watch 13.9 and girls 13.6 hours TV per week; this is a little less than 2 hours per day (INJUVE Report about the youth population in Spain, as quoted in Alemany 2008).

In Germany the youth sample is 12 to 19 years old, and the survey asked them about popular regular activities. Like in Austria, watching TV is the most popular activity in the spare time of German boys and girls, 92% of all respondents regularly watch TV during the week. Nearly one third of German youngsters between 12 and 19 years read magazines daily or regularly (Data source: JIM-Studie 2007, as quoted in Dahmen 2008a). We found similar

numbers in Sweden, where 95 % of 13 to 17 years olds watch daily TV and 33% read daily magazines (Mediabarometer of Nordicom at Gothenburg University 2005, as quoted in Davidson 2008).

Compared to those numbers 67% agreement with watching TV as preferred leisure activity in Slovakia seems rather low – but the sample differs, 15 to 29 year old “young people” were asked there (data from Zubalova, M. – Zvalova, M. – Sehnal, P. – Luha, J. 1994, as quoted in: Urbančíková & Kol'vecková 2008).

Overall it can be stated that television plays a huge role in young people's lives, the youth researcher Beate Grossegger calls television the “leanback medium number one” (2005). But beside TV other media are important as well, together with radio, newspapers and magazines TV belongs to the “communication basic infrastructure” which are used by teenagers everyday. Beside that special lifestyle niche-media and internet are completing the media mix of young people. The teenagers' motives behind the media consumption is on the one hand a personal benefit, to satisfy own interests and on the other hand a social benefit which means to know something about topics which are discussed among friends or other groups and in such a way increases the young person's prestige (ibd.). For educational research especially soap operas came into spotlight when studies could prove their relevance for professional choices. When young people recall job information of TV programmes knowingly, they mostly refer to soap operas (Dostal 2006).

3. Methodology

3.1 Aims and objectives

Vocational and educational choices are amongst others based on media representations of SET professions and professionals. Therefore WP 2 aims at learning more about the SET images in youth relevant media (magazines and TV soaps) in order to explain interdependencies of those images with low interests of young people regarding SET. In detail, WP2 analyses – in the tradition of trans-disciplinary cultural studies (Hepp & Winter 2008) – if and how youth media contain SET information.

After comparing literature and first country-specific media-analysis, we decided in the first expert meeting (in Barcelona, July 2008) to concentrate our media content analysis (Mayring 1997) on technological artefacts (machines, hardware, software) on users of (shown) technology and on SET professionals (scientist, engineers, etc.). That means we referred explicitly to a layperson's definition of SET rather than an expert's view because we wanted to analyse SET representations, which would be recognised by young readers and viewers as SET.

3.2 Quantitative and qualitative analysis of youth magazines

First, the WP2-leader provided a template for a “quantitative media analysis in all partner countries” based on secondary data for all consortium members. Then the consortium identified most influencing youth relevant media in each country, especially in the field of print media and television. We used up-to-date media data, for instance about the reach of TV shows and about the print run of magazines. In most cases we found those data on the internet pages of the respective media, some partners contacted media persons to gather information. However, all partners tried to answer the questions about the most popular TV series and most popular magazines in the age group of 14-19 years and if data were available they asked also about gender differences. Additionally all partners wrote descriptions of the context of youth activities in their country. To evaluate the importance of media (and especially TV and magazines) it is necessary to put the role of media in the context of the whole leisure activities of young people in the respective country. Therefore we collected country-specific

background information about leisure activities of youth in general and about their media consumption in special.

In first exploratory magazine analyses we found out, that youth magazines contain several SET representations, but only few of them are on the textual level, mostly they are images containing certain SET representations. That meant for us to focus on images and content analysis of pictures (and headlines, picture sub-texts) and less textual content analysis. A positive side-effect of the focus on images was that they can be “read” by all consortium members, because there is no language barrier, which makes it easier for discussions and a common interpretation (like during the reflection meeting in October 2008 in Graz).

For this image-focused content analysis methodological tools have been developed by the WP2-leader considering feedbacks of the consortium partners and using experts’ input. The feedback and the experts’ input has been exchanged during the methodological workshop with experts in genderedness of SET images in media – as part of expert workshop 1 in Barcelona (July 2008). Finally in this task, the WP2-leader provided a data sheet (“WP2 media analysis: youth magazine analysis document”, plus a fill-in-help with examples, see annexe and Thaler 2009) for the standardized quantitative and qualitative analysis of SET representations in youth magazines (with special focus on genderedness of contents) for all partners to enhance an inter-subjective reliable analysis (see also Mayring 1997).

In a fill-in-help- document, which the WP2 leader provided for all partners, answers to frequently asked questions of test users¹ and explanations of the analysis document and the purpose of single questions were given. For instance, we decided that the minimum-size of the analysed pictures should be one eighth of a page that means at least 7 x 10 cm. All pictures (including SET-related headlines) should be analysed and described in one data sheet; all images had to be scanned and stored on a CD-Rom.

One of our categories, the magazine place of the picture, is explained as important for our interpretation, because we wanted to know whether SET representations are mainly present in advertisements or in journalists’ articles. What images of SET lie behind journalists’ articles? Another category is the role of SET in the picture. This was important for the analysis, to learn more about if SET is presented as an interesting and self-contained topic.

A category, which goes back to the first expert-meeting in Barcelona (2008), is the main purpose of SET in the respective picture. We think this is a very important category, concerning images of SET. What happens to be one of the frequently checked items in this category was “SET as accessories”. Which means for instance if a shown person holds a microphone or a camera and is obviously not using it, but using the item more as a prop to play a certain role just for that picture or an image is using SET in the background to produce a stage set.

The category “SET represented as a job or as a product” sorted out whether a picture shows an engineer, a scientist, a computer specialist etc. (SET professionals) or if the picture just shows a technological artefact used by a person. If for instance a musician uses a microphone or a captain drives a boat, they are professionals using a SET-product, but they are no SET-professionals.

And the last category was the only openly asked question in the data sheet. It says: “Please describe the role of shown female(s) and/or male(s) in the respective SET picture. Are

¹ Thanks to Jennifer Dahmen, Sabine Stockinger, Christine Wächter and Magdalena Wicher who tested the first data sheet version with WP2-leader and provided useful feedback.

females and males doing the same? Are they scientists or engineers or SET users? Are they competently using or discussing SET or are the shown technological products accessories for models? Who is actively using SET (for instance working on computer)? Who is passive (for instance just watching at the monitor of another person who uses the computer)? Are there other important factors in the SET representation (cultural background/ethnicity, heterosexual normativity, age, etc.)?” (Thaler 2009). The result of this category led to interesting interpretations about the genderedness of SET images in each magazine.

3.3 Magazine analysis sample

In total 60 youth magazines have been analysed in 2008. The magazines are produced in Austria (Xpress), France (Closer, Phosphore), Germany (Bravo, Bravo Girl), Slovakia (Kamarát) and The Netherlands (Girly!, Quest).

Table 1: Number of analysed issues per youth magazine

	number of analysed issues
Bravo	22
Xpress	6
Girly!	3
Quest	3
Kamarát	4
Closer	12
Phosphore	3
Bravo girl	7
<i>total</i>	<i>60</i>

The differences in the analysis amount of the respective magazines is a result of different foci of the consortium partners (because MOTIVATION is a coordination action and not a research project, therefore it was more important to try out methodologies and exchange knowledge and results than analysing representative numbers of issues in each country).

3.4 Qualitative and quantitative soap opera analysis

Based on the methodology of Bohnsack (2007, 2009) detailed methodological guidelines have been produced to explain the general context of video-analysis and its gender-interpretative specificities (Thaler & Scheer 2009a).

This analysis comprises the following four steps:

1. Selection

First of all, only the scenes of interest need to be analyzed, in the case of this project this means scenes that are related to the research question (= scenes that contain the usage of technology and any reference to SET). A scene can contain several sequences, the main sequence (= the main theme/identity of the scene), the sub-sequence (= change of view/ take, but still the same identity) and embedded sequences (= completely different/new scenes that are shown during the main sequence).

2. Formulating interpretation

Secondly, the selected scenes are to be thoroughly described, containing the movement of the camera and the shot. What can be seen, what are the people / what is the person in the scene doing and saying?

3. Reflecting interpretation

Here the objective is to interpret what is viewable in the scene. The intention is to think about and reflect on the meaning of the actions, the message that comes through, basically to interpret how SET is portrayed. Additionally, the researcher tries to find an underlying frame of orientation, e.g. a style of handling technology by the protagonist.

4. Comparative analysis

In a fourth step, scenes with the same topic (e.g. the same technology used) are to be compared. Is the technology used the same or a different way? This needs to be done to find out the underlying frames of orientation, the implicit knowledge about SET, men and women of the protagonists and the director. Goal is also to find an answer to the question what view on men, women and SET the soap opera contains.

Graph 1: Chronological order of analytical steps of audio-visual media analysis

Thus, the WP2-leader developed a “Soap SET scene analysis sheet” (see annexe) and further explaining soap analysis guidelines (Thaler & Scheer 2009b), which comprised in a first quantitative analysis step the classification of SET, its duration in a scene and if it is presented in foreground or background; in a second qualitative analytical step these foreground SET scenes should be interpreted in a descriptive and reflexive manner. This instrument was accompanied by a document “Soap opera analysis – FAQ (Scheer & Thaler 2009a)” to enhance the comparability of country-specific soap opera research results.

3.5 Soap opera analysis sample

In total 62 episodes have been analysed in 2009, that are 1620.5 minutes analysis material. Again, the differences in the analysis amount of the respective soaps is a result of different foci of the consortium partners in this coordination action, that means some partners set their focus on school related interviews and others on media analysis.

Table 2: Description of the soap opera sample

	Analysed soap operas		
	number of analysed episodes	minutes per episode	analysed minutes in total
Anna und die Liebe	23	23-24 min.	540.5
Plus Belle La Vie	10	23-24 min.	235
Gute Zeiten, schlechte Zeiten	10	23-24 min.	235
Goede Tijden Slechte Tijden	10	23-24 min.	235
Panelák	5	35 min.	175
Física o Química	2	55 min.	110
Andra Avenyn	2	45 min.	90
<i>total</i>	62	-	1620.5

The Austrian team analysed 23 episodes of the soap opera “Anna und die Liebe” (“Anna and love”) that were shown on the Austrian TV station “ORF1” from February 27th until March 31st 2009 (episode numbers 130 to 152; each lasts around 23 minutes). All 23 episodes have been analyzed quantitatively and eleven of them qualitatively by Lisa Scheer, using the soap analysis guidelines (Scheer & Thaler 2009b). The qualitative analysis included the reflective interpretation of Lisa Scheer, Anita Thaler, Christine Wächter and Magdalena Wicher in a workshop held in June 2009 where all foreground SET scenes were discussed in detail (ibid.). In France, ten episodes of the daily soap “Plus Belle La Vie” were analysed during the second week of May 2009 (each lasts 23 to 24 minutes). All episodes have been watched several times (around 3 or 4 times) to analyse it more deeply (Pinault 2009). Also in Germany, Jennifer Dahmen (2009) analysed ten episodes of “Gute Zeiten, schlechte Zeiten” (“Good Times Bad Times”) in May 2009. In the Netherlands the Dutch version of ‘Goede Tijden Slechte Tijden’ (“Good Times Bad Times”) were analysed, during 2 weeks (10 episodes between May and July 2009; Schönberger & Rommes 2009). The analysis in Slovakia focused on five episodes of the daily soap “Panelák” (“Block of flats”; Kol’vecková 2009), in Spain on two episodes of “Física o Química,” (“Physics or Chemistry”; Alemany 2009), and in Sweden on two episodes of “Andra avenyn” (“Second avenue”), number 150 and 151, that were shown in spring 2009 (Davidson 2009).

4. Results and interpretations

4.1 Quantitative magazine analysis

Altogether the consortium collected and analysed about 1012 SET images of 8 different magazines with the provided data sheet (Thaler 2009). The analysed pictures are distributed differently to the different European youth magazines. “BRAVO” leads with 491 SET images, because this magazine was analysed partly in Austria (316)² and partly in Germany (175); averagely 22.3 SET pictures were analysed per issue. 111 SET images were found in the Austrian magazine “Xpress”, which makes averagely 18.5 analysed SET images per issue; 13 in Dutch “Girly!” (4.3 per issue); 48 in Dutch “Quest” (16 per issue), 4 in Slovak “Kamarát”, 202 in French “Closer” (16.8 per issue), 60 in French “Phosphore” (20 per issue) and 87 in German “BRAVO GiRL!” (averagely 14.5 analysed SET images per issue).

² This high number of analysed images was only possible due to a very engaged student: Magdalena Wicher.

Table 3: Descriptive statistics of analysed magazines

Analysed youth magazines			
	number of ar	number of SET images	SET images per issue
Bravo	22	491	22.3
Xpress	6	111	18.5
Girlz!	3	13	4.3
Quest	3	48	16.0
Kamarát	4	4	1.0
Closer	12	202	16.8
Phosphore	3	60	20.0
Bravo girl	7	87	12.4
total	60	1016	16.9

From all analysed pictures nearly one half (48.8%) shows SET as a main topic in a picture, for instance a singer singing with a microphone in her hand, and the other half (51.2%) represents SET in the background, for instance a car in the background of a fashion shooting.

Another analysed question is if the role of SET differs in the respective magazines. And indeed there are some interesting results: While in German “BRAVO” SET is nearly equally represented in background (49.7%) and as a main topic (50.3%), nearly like in French “Phosphore” (46.7% background; 53.3% main topic); in French “Closer”, Dutch “Girlz!” and German “BRAVO GiRL!” around two thirds of SET is represented in background, while in Dutch “Quest” three quarters of SET images show SET as a main topic.

Most interestingly, the vast majority, 96.2%, of all analysed pictures represents SET as a product, a cell phone, an e-guitar, a computer, a car etc. Only 3.1% of all analysed SET pictures represent SET as a job, showing an engineer or a scientist (see table 4).

Table 4: Frequency of SET image-representations (as job or as product)

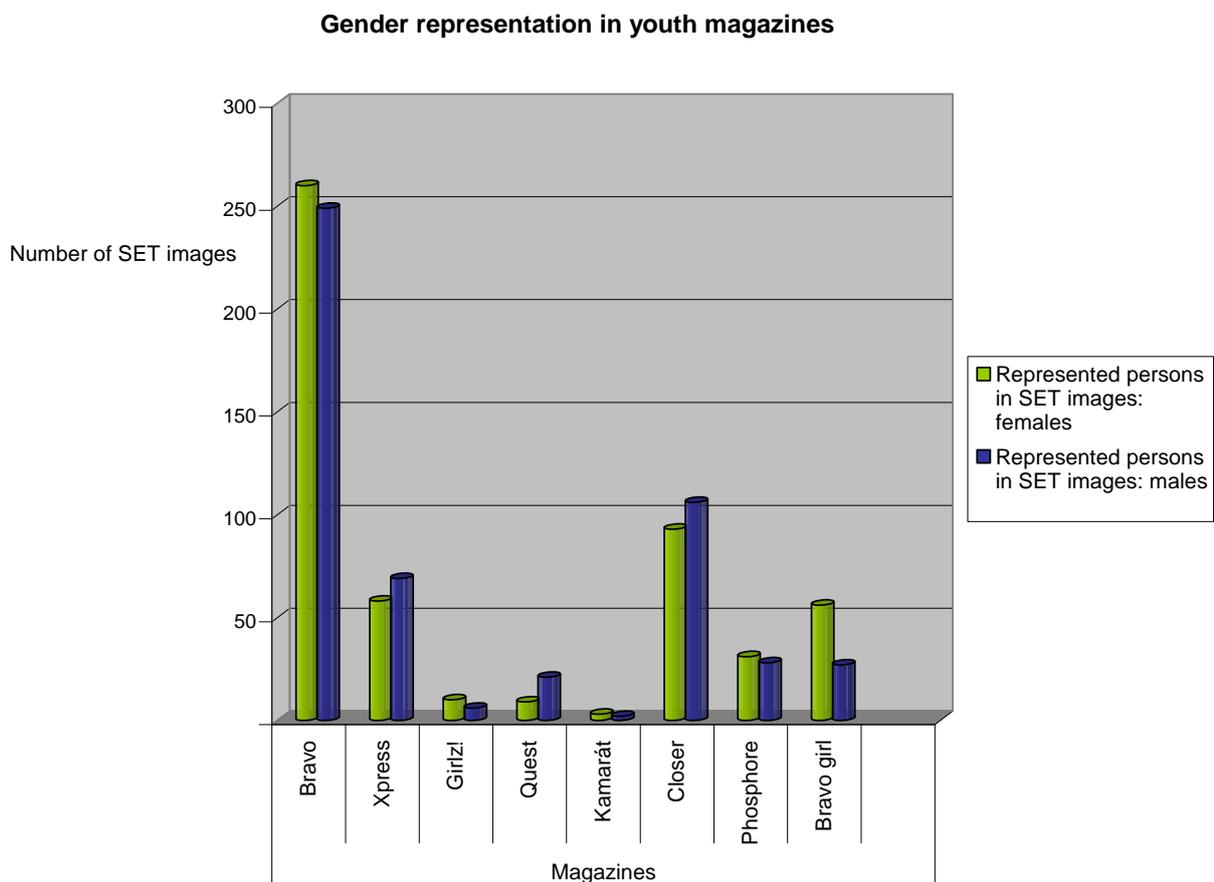
SET represented as			
	frequency	valid percentages	accumulated percentages
a job	31	3.1	3.1
a product	976	96.2	99.2
other	8	.8	100.0

Most SET pictures are placed in a typical journalist content area, like an article or a story or a poster (59.5%). SET is often represented in advertisements as well (34.0%). 57.4% of those are advertisements for SET products and 42.6% of advertisements show SET even though the respective product of the commercial is not related to SET. Only 3.1 % of analysed SET pictures come from special sections dedicated to SET; that are 29 images. These special SET sections are not very prominent in youth magazine. Only Austrian “Xpress” and German “BRAVO” have them. “Xpress” has a regular SET section in each issue, therefore 75.9% of those analysed 29 SET section pictures come from the Austrian youth magazine. German “BRAVO” has special job issues – which are dedicated to SET jobs sometimes – special SET sections are a temporary part of the magazine, which leads to 20.7% analysed SET section pictures coming from “BRAVO”.

A huge majority of SET representing pictures show SET with persons (78.3%). And 51.4% of all SET pictures represent at least one female (some together with males, more about that can be found out in chapter 4.2 about gender and SET representations); all in all the analysed SET images seem rather gender balanced: 27.1 % show only males with SET and 28.3% show only females with SET.

Like in the magazine-specific analysis in the question before, the Dutch magazine “Quest” is an exception in the question of representation of SET with or without persons. While all other magazines show SET mainly with persons (between 71.8 and 85.6%), “Quest” has a little more than a half (52.1%) of all analysed SET pictures showing SET without any person.

Looking at this variable more onto a detail level, we can analyse the representation of females in those SET pictures. Not very surprising explicit girls’ magazines like “Girls!” and “BRAVO GiRL!” show more SET pictures with females, but all magazines show mostly pictures with females or mixed gender groups. Except “Quest”, where you can not only see more SET pictures without any person in it, but also more SET pictures with only males than pictures of females plus mixed gender groups.



Graph 2: Gender representations within SET images per youth magazine

In graph 2, it can be seen that both, females and males are quantitatively equally presented with science and technology in youth magazines. One exception is the German girls’ magazine “BRAVO GiRL!”, where two thirds of all SET images show females. This over-

representation of females goes along with the general over-representation of females in the whole magazine, as it is a girls' magazine explicitly aiming on female readers. But a closer look at one special field of technology (vehicles: that are cars, motorbikes etc.) shows that this pattern (over-representation of girls in SET images in a girls' magazine) is not generally the case.

Table 5: Percentage of vehicle images and gender in girls' magazines

	vehicle images with females	vehicle images with males
Girlz!	50.0%	50.0%
Bravo Girl	42.9%	57.1%

In table 5 it can be seen that neither in the Dutch girls' magazine "Girlz!" nor in the German "BRAVO GiRL!" vehicle images are over-representing females, for "BRAVO GiRL!" the opposite is the case, males are more often portrayed with cars and motorbikes, although males are only shown in one third of all SET images. Because of only small numbers in those cases, this relation can not be statistically proved but nevertheless it is a very interesting tendency.

Another question which interested us was if gender was co-constructed by using certain colour codes in pictures of females or males presented with SET. Purple is certainly the most differentiating colour regarding magazine type. While „BRAVO“ and „Xpress“ use purple equally seldom in SET pictures with both genders – only every 20th to 25th times – the girls' magazine „BRAVO GiRL!“ uses in about every tenth SET image with females and even in about every seventh SET picture with males purple as predominant colour. Interestingly in „BRAVO“ purple is a little more often presented in SET images with females. It seems as if purple has a certain gender colour code function. That could mean that girls' magazines can be distinguished from others by using relatively more often purple in their SET pictures, while youth magazines aiming at readers of both genders are using purple more in their female portraying SET images (Thaler & Dahmen 2009b)

Magdalena Wicher (2009) argues in her analysis that the frequent use of purple and pink can on the one hand be seen as a strategy to construct a certain concept of femininity in these pictures but on the other hand it must be kept in mind that they are quite simply fashionable at the moment. Especially purple is commonly used nowadays. The final conclusion is that there exists a doing gender intention through colours in pictures (ibid.).

4.2 Country-specific magazine analysis

Austria

The analysis of 14 issues of "BRAVO" (complete analysis from three months) and 6 issues of "Xpress" (complete analysis from six months) resulted in several findings. First, both youth magazines have gender stereotypical and gender equal SET representations. Second, the gender equal SET representations contain mostly unrealistic SET representations, using technological artefacts as props of a scene. Third, the degree of gender equality of SET representations differs between the two magazines. While "Xpress" has overall less overt gender stereotypical SET representations but additionally some subtle forms as well, "BRAVO" has less subtle but more overt gender stereotypical SET images. Fourth, the SET fields differ; the Austrian "Xpress" shows beside cell phones and music technology also often

computer technology; the German “BRAVO” shows cell phones and music technology as well, but additionally less computers and more vehicles, which are explicitly represented as male technology (Thaler 2008b).

Concluding it can be said, that “BRAVO” is more gender and SET stereotypical than “Xpress”. But the gender equal SET representations of both magazines show predominantly unrealistic SET situations, either using technical artefacts as props or in the stage set of a picture to present a certain motive.

Good practices are seldom, but a little more often presented in “BRAVO”, placed in their job specials. Although those good practice examples are representing SET in a realistic way and connecting SET to persons in a non-gender-discriminatory style, overall males are much more often connected with electronic and machine related technology, while chemistry and lab situations are only represented with females. That means although the single pictures are not stereotypical and showing realistic situations, the message of the whole job special sections is, that chemistry is a female field and electronics and mechanics are predominantly male. The good practices in “Xpress” are different, using less explicit gender attribution (ibid.).

France

Cloé Pinault (2008b) states in her analysis that in the French magazine “Closer” SET is only represented as a job field in trainings ads. And SET is very often represented as a technological artefact without persons, if there are persons, they are predominantly male. Females in SET pictures are presented in underwear, which Pinault interprets as the hidden message “that women can use SET without losing their sex appeal!” (ibid., p.1). In the second analysed French magazine “Phosphore” Pinault concludes that SET is not differently represented with males and females. In both magazines no SET and gender good practice pictures could be found, SET is presented as everyday tools (microphones, mobile phones, cameras, MP3-players, cars) and no special competence is demanded to use them (ibid.).

Germany

Jennifer Dahmen (2008b) analysis on the basis of four SET-and-mixed-gender-relation-representations (of “BRAVO” and “BRAVO GiRL!”) questions of gender power relations in SET images. Her results are, that in two of them none of the shown persons uses the presented technology, in the other two the represented SET and gender relation is stereotypical, the males are in charge and using the technology. Furthermore, Dahmen (ibid.) could find no good practice in “BRAVO GiRL!” and mentions that good practice examples of SET and gender images are hard to find generally. Like in the French case in German youth magazines, Jennifer Dahmen states that SET in the foreground is mostly part of advertisements.

For “BRAVO GiRL!” Dahmen (ibid.) concludes: “The magazine has a strong heteronormative direction, it’s all about girls and boys and their relationship respectively information and tips for girls how to appeal to boys. These tips never were gender neutral formulated. In one issue an interview with an openly gay living singer and moderator was included about his personal experiences with coming out and being gay. But this was the only exception.” (p.6)

But she describes a positive exception in “BRAVO”, a special section called “Job Attacke” which introduces future job fields to young people, including legal aspects of apprenticeships and recommendations about how to find the right job. One of the presented “dream job”

which Jennifer Dahmen (ibid.) found in “BRAVO” is the pathologist. The SET image represents a scene from “CSI Miami” with a female pathologist. Dahmen (ibid.) writes about that: “The so called “CSI effect” (Rommes et al. 2007) is taken up by the BRAVO magazine too (issue 43), regarding the work in forensics as ‘dream job’. Besides the example of the editorial journalist which is listed as dream job also, the profession as pathologist is the most realistic one to obtain, compared to the other examples ‘singer’, ‘moderator’ and ‘actress/actor’.” (p.5)

Another presented SET field is solar technology, but all four pictures (explaining the jobs of mechanotrician, solar-technician, process engineer and micro-technologist) show exclusively males handling SET. And finally, Jennifer Dahmen spotted the job field “garden, wine and landscape” as represented equally with males and females (2008b).

Jennifer Dahmen searched for a connection to the MOTIVATION interviews with pupils as well; and found out, that teenagers, who agreed on reading youth magazines, confirmed past or current reading of “BRAVO”. But they were not aware of a connection to SET, except one German interviewee who explicitly mentioned the special job section ‘Job Attacke’ where she has read about SET job information (ibid.).

The Netherlands

Karen Mogendorff (2008) concludes about the analysis of the Dutch magazine magazine “Girly!” that SET images in that magazine have mostly to do with people. Furthermore, girls and women are represented as competent in SET, but like Mogendorff states “in a feminine way (using ‘female’ SET artefacts) only” (p.2).

In contrast, the other Dutch magazine “Quest” connects SET competence mainly to white men, especially concerning stereotypically called ‘male’ technology. If women are present in SET images, what is not often the case, traditional gender roles are often reinforced.

Mogendorff found out that “Quest” has no SET images, where males are competently using so called “female” technology (like iron or hairdryer; ibid.).

Only few images show both men and women in SET representations. But when, it comes to an effect that explains why the analysis of mixed gender relations is – in terms of knowledge production – a fruitful one: Because power relations become rather visible, if male and female persons are shown in the same picture. But Karen Mogendorff found less gender-connoted technology as well and she concludes: “Interestingly, the technology used in the latter images tend to be less outspoken male or female; laptops for instance are used by both men and women. The relative gender neutrality of SET artefacts such as laptops (and specific kind of games?) may explain why sex-segregation is less pronounced (laptop pictures are not monopolized by one sex like images of hairdryers).” (ibid., p.2)

Slovakia

Gabriela Koľveková (2008) concludes in her gender analysis of the two analysed Slovak magazines “Mladý vedec” (1 issue, 0 SET images) and “Kamarát” (4 issue, 4 SET images) that: “Some stereotyping in the pictures persists.” (p.10). For instance cooking is presented as a female household chore.

4.3 Quantitative soap opera analysis

In the analysed soap operas averagely 63% of all scenes had SET in it, that means a cell phone or a notebook or an engineer or scientist could be seen. Considering only active SET scenes, that means scenes with SET in foreground, the percentage is much lower, averagely 24.2%.

Table 6: Descriptive statistics of analysed soap operas

	Analysed	soap operas	
	analysed episodes (minutes)	% of SET scenes per episode	% of foreground- SET-scenes
Anna und die Liebe	23 (540.5)	65.0	27.0
Plus Belle La Vie	10 (235)	72.5	26.9
Gute Zeiten, schlechte Zeiten	10 (235)	91.8	-
Goede Tijden Slechte Tijden	10 (235)	29.2	15.5
Panelák	5 (175)	73.3	17.8
Andra Avenyn	2 (90)	46.2	33.8
<i>in average</i>		63.0	24.2

That means SET takes plays in all soap operas, to which extent is rather dependent of the current content of the soap opera episode (e.g. a storyline playing in hospital and showing machines increases the SET scenes). The active usage of SET is much lower in all analysed soap operas, this is not so much influenced by the actual content, it seems to be as if SET is – like in the magazines – more often parts of the stage set than a actively used actor in the soap opera.

4.4 Country-specific soap opera analysis

Austria

The 23 analyzed episodes of “Anna und die Liebe” consisted of averagely 28 scenes each. An average of 18 scenes of each episode can be classified as SET scenes, showing or dealing with SET in foreground or background. That means a rather high percentage of 65% of all scenes were SET scenes, but this number decreases dramatically to only 27% when counting only scenes with SET in foreground. On average, only 7 to 8 scenes of one soap opera episode showed people dealing with technological artefacts, talking about SET or interacting with a SET professional (Scheer & Thaler 2009b).

A more detailed look at the scenes with SET in foreground reveals that there are two main technological artefacts shown in the analyzed soap opera: cell phones and elevators. In 80 out of the 650 analyzed scenes, the portrayed persons used cell phones to communicate. On second place comes the elevator which plays a rather important role in the soap opera “Anna und die Liebe”, because to get to the different locations the protagonists usually use an elevator. SET in background is commonly used to emphasize the function or purpose of a room, e.g. an office or a café. Due to the fact that two main locations of the analyzed soap are an advertising agency and a café, the two leading technological artefacts in background are (computer) screens and refrigerators. Interestingly, employees were seldom portrayed as working on the computers, they were mostly found in the background. Cars, busses and trucks are regularly shown to create the feeling of being in Berlin, the city where the soap is located (ibid.).

Summing up, one can say that “Anna und die Liebe” first of all does not contain many scenes showing the active use of a technological artefact (SET in foreground). The two main plots – Anna working at the advertising agency and Anna’s mother managing a restaurant and kitchen – and Lars’ café which is an important location should logically lead to many scenes with SET in foreground but they do not. In the analyzed episodes, (cell) phones are used to emphasise the profession of the portrayed men while unlike common stereotypes women are seldom shown talking on the phone. Other technological artefacts like laptops, computers, coffee machines or stoves which in reality would be regularly used by people in the portrayed occupations are almost absent. All together, the role that SET plays in “Anna und die Liebe” is very unrealistic and rather unsatisfying in terms of an equal gender representation. This is very unfortunate because we know of the influence of daily soaps on young people; they play an important part in terms of identity construction of their young audience (Göttlich et al. 2001). Theunert and Gebel (2000) emphasize in their book that soaps contain learning effects concerning gender roles, relationships and life plans.

In the sample of the Austrian analysis no gender equally good practice example could be found, either there was technology used and shown in a meaningful way and handled by a person, but then only by men or technology was used more like a prop to set the stage set. However, the context of the restaurant and the advertising agency could be easily used to show technology and science (Scheer & Thaler 2009b).

France

“Plus Belle La Vie” shows the life and events of different families living in an imaginary district of the city of Marseille called “Le Mistral”. The soap is organised through two core soap topics: personal lives of the inhabitants of “Le Mistral”, their happiness and misfortunes and criminal affairs of the district. The main story during the analysis was running around a contamination water affair. That brought in the possibility to deal with a SET topic and to show SET professions (Pinault 2009).

“The ‘clever’ part of this soap is to melt intimately the real life (e.g. 24th of December is coming, Les Mistraliens are as well preparing Christmas) to each one of the scenario. Each episode begins with the breakfast, and ends with the night coming”. (Thaler et al. 2009, p.5)

Pinault (2009) states that for France the soap opera is quite revolutionary, because the series broaches the issue of:

- Homosexuality
- Homo-parental hood
- Marijuana used as medicine
- Other drugs
- Euthanasia
- Environmental problems and how huge agro alimentary firms produced the mad cow disease

This last point leads to an important aspect that SET could mainly be perceived as a “negative” connoted topic (the contamination, the mad cow disease, Creutzfeldt Jacob), but in this soap there are positive SET aspects as well: the decontamination, internet activities for the society etc (ibid.).

Among the 171 analysed scenes (in ten episodes), 124 SET scenes (background and/or foreground) could be found, that are 72.5% of all scenes. Among these SET scenes, 78 are in background, 18 are in foreground, and 28 are in background and foreground.

Although the different female and male characters would use tools or machines equally, there are some slight gender inequalities as well. For instance, when one female main character insists several times that she knows nothing about technology. But in most cases, “Plus Belle La Vie” offers good role models, like the character of a site forewoman or the female head of the police station. Overall Pinault (2009) says that the characters are regardless of their gender not too stereotyped, and the homosexual love stories are told very commonly.

The good practice aspect of this French soap can be found more in the jobs of the characters or in their good deeds and even some of the men would go beyond so called hegemonic masculine identity, but the soap does not show SET usage, that could be one thing to optimize to bring some insights into what a site forewoman actually does in her job (ibid.).

Germany

“Gute Zeiten, schlechte Zeiten” is the most successful German daily soap opera. Celebrities like for instance the former chancellor of Germany Gerhard Schröder have guest appearances on the show and according to a current youth and media survey (Medienpädagogischer Forschungsverbund Südwest 2007) this soap is the second popular TV series of 12 to 19 years old Germans. The soap plays in Berlin and covers various topics of life (from birth to death, love to hate, wedding to divorce, hetero- and homosexuality, employment and unemployment) around a group of friends and families (Dahmen 2009).

In the ten recorded episodes, 209 scenes have been analysed, 192 of them had a relation to SET, that are 91.8% of all scenes. The majority of technological artefacts portrayed in the two weeks of analysis belong to everyday used technology of people like cell phones, TVs, fridges, coffee machines or notebooks. There were only five different types of foreground technology (cell phones, notebooks, film and photo cameras, cars and microphones). Jennifer Dahmen states, that this shows a connection to the results of the magazine analysis (ibid.).

The series does not explicitly create a positive or negative image of SET. Technology is mostly casually for working or communicating, and it is only very seldom an active part of the plot. Good practice SET-scenes could not be found during the 10 analysed episodes despite all the science and technology connections in the soap. The portrayed SET use is mainly gender equal, for instance notebooks and cell-phones are equally used by female and male characters. But SET related professions are mainly fulfilled by men (ibid.).

Netherlands

The analysis of two weeks of the Dutch soap opera “Goede Tijden Slechte Tijden” comprised 219 scenes of which 64 were SET-scenes, that are 29.2% SET scenes. 34 of those SET-scenes showed SET in active usage (in foreground), that are 15.5% (Schönberger & Rommes 2009). The Dutch team found a “work versus obstacle image” of SET in the analysed soap, as in various scenes the shown technology demands attention of someone, whose attention is wanted by another person (for instance Danny is a handyman, he works with electrical equipment, which seems complicated for Ronja and almost like an obstacle, because she prefers Danny’ undivided attention). Mobile phones have a rather communicating image but the gender analysis could show that male characters use it for communicating about work or business-like things (ibid.).

There were no good practice SET scenes found in the Dutch soap opera, only few women (25%) have non-traditional jobs (owner/director, stockholder) and none of the men has a

female connoted profession. Three of the male characters have SET jobs (e.g. handyman) or work with technology. A female photographer could be interpreted as SET-related, but as she is never shown with technology, the SET-relation is not too strong (ibid.).

Slovakia

Gabriela Koľveková (2009) sums up, the general topic of the Slovak soap opera “Panelák” are challenges to live in the world of nowadays. Although the TV series was originally planned for adults it began to be popular for teenagers as well (TASR 2008 as cited in: Urbančíková & Koľveková 2009). In 74 from 101 analysed scenes SET could be found (73.3%), 18 of them showed SET in foreground (17.8%). Koľveková (2009) divided the qualitative analysis in contextual knowledge about SET (for instance a male character who prefers using old music technology like a gramophone or a female army retiree who likes to tinker model aircrafts); SET presented by characters (the male character of an IT professional) and SET scenes showing artefacts. The image of SET artefacts is according to Gabriela Koľveková (ibid.) three folded: some SET artefacts created the atmosphere (e.g. decorations, music and lights in a café or bar), others are directly used (e.g. in the TV studio) and the third category is SET which supports the plot (e.g. using mobile phones).

Two situations could be interpreted as good practice SET scenes in the Slovak context, one in the title of “Panelák”, where a male character takes the iron of his wife and irons by himself. And the second situation is when a female character (the army retiree) glues her model airplanes (ibid.). On the other hand it has to be mentioned that SET jobs (scientist, PC expert) are only portrayed as male domains.

Spain

The Spanish soap opera “Física o Química” (“Physics or Chemistry”; Alemany 2009) plays in a secondary education school and is mainly about six to eight teenagers characters and their love issues (e.g. sex, ménages-à-trois, jealousy, homosexuality), and also about the school teachers and their love affairs with each other. This soap opera is very popular among 13 to 14 year-old youngsters, and at the analysis period this soap has a 45.7% of the viewing (793,000 in May 2009). “Física o Química” was also most often quoted by female and male teenagers during MOTIVATION-related interviews (ibid.).

Carme Alemany (2009) stated that portrayed technological devices are connected to everyday life, and she interprets the SET representation in the soap in the light of a “customary use of present-day consumption society” (p.3). As computers are part of nowadays schools and became an essential tool, laptop computers are parts of teachers’ equipment, regardless their gender. But although technology is a logic actor in this soap, presented technology devices are a part of the background setting and Alemany criticizes that SET is gender stereotypically represented (ibid.).

These gender stereotypes can be observed in the soap’s main topic of love relationships as well the roles of boys and girls seem not to have changed too much (e.g. girls play their indirect-seduction role; they are jealous). Therefore, it is not very surprising that technological artefacts are framed within a gender-traditional role, in which females use computers and mobile phones but they also have to ask men for driving them by car or helping them with pen drives (ibid.).

Sweden

The Swedish soap opera “Andra Avenyn” (“Second avenue”) deals with families’ lives in a suburban environment in Gothenburg, including a school, a café, a boxing club, a church and a bed factory. Out of 65 scenes there are 30 SET scenes that are 46.2%. Due to many medical equipment scenes the relation of SET in background (576 seconds) to SET in foreground (282) is about two to one, in terms of duration of the scenes (Davidson 2009).

Bodil Davidson states: “A soap opera picturing a group of women and men who work together, lead family life together, have free time together, could be expected to house different kinds of SET, both in background and in foreground. Andra Avenyn does not do that. People are coming and going in different surroundings, but they do not seem to be busy working or doing any other things people usually do.” (ibid. p. 11)

Especially the place of Gothenburg, a busy city with a very famous technical university (Chalmers), but also the portrayed bed-factory “Björnsängar” (Bearbeds) should bring more foreground SET into the storyline of “Andra Avenyn” than it actually does. Davidson states that she could not find a good practice SET scene during her analysis, it does not even take the chance of showing the usage of simple technologies (ibid.).

5. Reflection of methodology

One aim of MOTIVATION was to develop methodologies and to exchange knowledge about them. The WP2 methodology stands in a tradition of cultural studies, where a trans-disciplinary approach is as important as it is for the MOTIVATION project (see for instance Hepp & Winter 2008).

However, the two main instruments of WP2 – to analyse youth magazines and soap operas (printed images and video material) – are specific for MOTIVATION purposes created content analyses (Thaler 2009 and Thaler & Scheer 2009). Content analysis is especially applicable for communication material like mass media products. Its benefits lie in a well-structured system of categories, which supports the analysis process and the comparability of results (Mayring 1997). Especially the optimisation of intercoder-reliability was a central point for producing detailed guidelines for the MOTIVATION consortium (Thaler 2009 and Thaler & Scheer 2009).

In two expert meetings the respective WP2 guideline-drafts have been pre-discussed and improved, that was in Barcelona (July 2008) for the magazine analysis and in Nijmegen (March 2009) for the soap opera analysis. In each case two subsequent reflection meetings (in Graz October 2008 and in Fagerhults/Sweden August 2009) gave all consortium members the possibility to share experiences with the guidelines and share first results of their analysis work as well. While the expert meetings helped to improve the guidelines considering expertise within the consortium but additionally with external expertise, the reflection meetings aimed exclusively on the consortium-internal exchange process. These feedback and reflection loops helped not only to raise the quality of WP2 results but to exchange knowledge about used methodologies and the content of “SET and gender in youth media” as well. This exchange is most important when international comparisons are made. Country-specificities within the European Union are a challenge and a chance in all European projects. The need to explain the country-specific situation (for WP2 that was the context of youth and youth media in each country) makes context variables within the own country much more visible and

strengthens the general role of contexts in empirical research. Thus, the exchange of country-specificities alerts everybody to important factors of her country.

The instruments of WP2, the magazine analysis and the soap opera analysis guidelines, have quite proved themselves. They could be – with adaptations to specific contexts – used for further research about gendered image of SET in either printed or audio-visual youth media. For further research bigger samples as well as wider fields of applications should be used. That means beside popular youth magazines and soap operas various other popular youth media (and also not solely media focussing on youth only) should be included. And each media sample should comprise a representative samples, as especially in TV series like in our soap operas the role of SET changes with the storylines and by analysing one or two weeks only many coincidental results can occur.

Another critical point is that with the guidelines we produced too much data, which we could not analyse and use because we had – due to our project status as a coordination action and not a research project – very limited resources.

However, our results brought some very interesting results which should be included as hypotheses in new research projects about images of SET in media: The representation of SET as accessories, the question of prototypical images in youth media and the country-specific differences and cultural contexts should be further researched.

And finally it would be interesting to test the methodological guidelines and the hypotheses in digital media contexts. Information and communication technologies would be not only the object of media analysis but active actors of a digital media analysis as well. This would enlighten also the paradox that many young people say that they are not interested in SET while they simultaneously use technology in their daily lives.

6. Conclusions and interconnections

Although European students agree on the importance of science and technology – which was revealed in several studies (see for instance OECD 2007; European Commission 2001) – only a minority of them can envisage a career in science, engineering or technology. In MOTIVATION we searched for possible explanations, in this WP2 especially in youth media. This analysis and knowledge exchange process should bring more insights about the role of media in the process of shaping stereotypical images of technology in youth's minds (Osborne, Simon & Collins, 2003); and help explaining effects like the declining of SET students.

That youth media have an influence could be confirmed by pupils' interviews and focus groups of WP 3 and 4 as well. For instance in Austria, Germany and The Netherlands interviewees told about popular science TV shows, they like to watch and their parents and teachers support. But although the interviewees agreed on reading the magazines of our sample (for instance "BRAVO" magazine in Germany and Austria) and watching TV programmes which have either been analysed in WP 2 (for instance "Anna und die Liebe" or "Física o Química") or in WP5 ("Klokhuis") as well, they were not aware of SET as a topic in those media (Thaler & Dahmen 2009b). One explanation could be that some interviewees were not reading certain magazines or watching certain TV programmes any more (like the Dutch children's show "Klokhuis"; see WP5 chapter), as they see themselves with 15 or 16 years as "too grown-up", so their actual consumption of the respective media lies some years behind. Another important explanation is that for WP2, we focussed especially on non-SET-magazines and TV-programmes, because we wanted to learn more about the incidental

learning potential of popular media. Therefore the assumption is that SET is not a prominent topic which readers and viewers are aware of. One exception of that was again the special job section “Job Attacker” of BRAVO, which has been recalled by a German interviewee (Dahmen 2008b, Thaler & Dahmen 2009b).

By analysing leisure time media of young people we could conclude two major findings: First, youth magazines and soap operas show a lot of SET, especially technology, therefore they bear a huge potential for informal and incidental technology learning. Second, the representation of SET lacks meaningful embeddings and is often stereotypically presented, mainly gender-stereotypically (Thaler 2010). To provide information about how SET could be embedded meaningfully and gender equally in magazines and TV productions was one of the aims of this WP2 and will be the focus of the last part of this chapter: recommendations (mainly for media producers).

Given the fact that only 3.1% (in absolute numbers: 31) of all our 1016 analysed magazine pictures represent a SET profession, the strategy of setting a broader scope of SET and analysing all SET representations (mainly technological artefacts), instead of focusing on scientists and engineers only, was confirmed. That means also that we did not find too many SET-professional prototypes, which we were searching for WP4. In WP4 the main question was how pupils’ individual images go together with SET professionals’ prototypes and in WP2 we wanted to get some ideas where those prototypes are coming from. Nevertheless, the huge majority of SET images in youth magazines portray SET products, either as a main topic or in the background. That means although we found many SET images, they portray mostly technological artefacts, that means 96.9% of those SET images could not explain the prototype-question of WP4.

The 31 SET-job images stem mainly from the German magazine “BRAVO”, where an irregular special section called “Job Attacker” introduced future job fields to young people. One issue (BRAVO, nr. 43, 2008) even used the “CSI effect” (Els Rommes 2007) where work in forensics is presented as “dream job”. But, in this magazine section gender segregation also takes part, as some technology fields like electronics or mechanical engineering are presented as male domains while chemistry and medicine are portrayed with females. This reproduction of gendered SET fields contradicts the general intention of this job special, because the gender-sensitive formulated job-titles and the equal portrays of women and men show a certain aim for gender equality. This could be explained with Angelika Wetterer’s (2008) concept of “gender knowledge” (in German: *Geschlechterwissen*), where a rhetoric and a pre-reflexive level of “everyday’s gender knowledge” (in German: *alltagsweltliches Geschlechterwissen*) can be distinguished. Regarding the magazine analysis results it can be assumed that gender equality has become an important value, at least it is so important that it takes place on a rhetoric level – on the surface – for instance when it comes to an equal representation of females and males or the gender-sensitive formulation of the job-titles in the headings. But a deeper analysis (the qualitative gender analysis of WP2, but also a gender-sensitive analysis of language) could reveal that the applied gender knowledge still derives from an everyday’s level and not from a gender expertise, because the pre-reflexive level (visible in the detailed analysis of pictures) consists of gender stereotypes and the conservation of traditional gender roles (Thaler 2010). Therefore, even the irregular job section of “BRAVO” which looks like good practice on the first glance, could not be recommended like the other good practice SET education measures described in the WP5

chapter of this report. If these few exceptions of scientists, engineers and technological professionals found amongst all SET pictures could be a source for young people's prototypes, could only be answered in the WP4 chapter, where the drawings of teenagers' interviews and results from interviews and focus groups are interpreted regarding the self-to-prototype-matching theory (Hannover & Kessels 2004).

However, in this analysis point it becomes clear why media and their influence has to be further researched, because while in formal learning settings rules about gender equality exist (for the formal learning arena "school" see WP3 chapter), in informal learning arenas gender knowledge is generally unconsidered (Stern et al. 2007, Thaler 2010).

The second part of media analysis of seven European soap operas brought as well relatively many SET representations (63%), but only few of them can be seen as good practice examples in terms of representation of SET and even less in gender equal SET representations. Six of the seven analysed soap operas, namely "Física o Química" (Spain, Alemany 2009), „Gute Zeiten – Schlechte Zeiten“ (Germany, Dahmen 2009), "Goede Tijden – Slechte Tijden" (Netherlands, Schöneberger & Rommes 2009) "Panelák" (Slovakia, Koľveková 2009), "Andra avenyn" (Sweden, Davidson 2009) and "Anna und die Liebe" (Austria, Scheer & Thaler 2009) are offering similar results than the magazine analysis: Technology is often part of the stage set and seldom used in a meaningful way. The few meaningful SET examples (like a person actually working on a computer or repairing a machine) were sometimes perpetuating gender stereotypes and in most cases adjusting traditional gender roles. The positive exception of the soap opera analysis is the French TV series "Plus Belle La Vie" (Pinault 2009), which broaches the issue of SET in various ways, mostly via female and male SET professionals and up to date scientific and engineering stories. This soap opera could be seen as a popular and good practice of informal SET learning, because the images of SET, which are represented in the soap are relatively diverse and real (Thaler et al. 2009). This is a result which can be seen additionally to the good practice measures described in the WP 5 chapter.

Again (like for magazines) it has to be questioned, whether the few SET-job-portrays in all our analysed soap operas could explain where the stereotypical SET-prototypes of young people – found in WP4-interviews – actually are coming from.

The overall result that magazines and soap operas often present SET in their images and scenes could be used in formal SET learning arenas like in schools as well. The topics of youth's interest portrayed together with SET in media can be used for SET education, by connecting exactly those leisure topics of interest with science and technology classes in school. This result could be found in WP3 interviews with pupils, where girls and boys stated that they want more hands-on work at school, they want to do experiments in chemistry by themselves and that it is important for them to experience science and technology by themselves and not only hearing about SET during lecturing lessons (Dahmen & Thaler 2009; Thaler & Dahmen 2009a, 2009b). And as we know, that explaining for instance science to others is a very effective learning strategy, it can be deduced that especially SET learning should be connected up to youth relevant contexts and interests.

For instance the research project „Engineer Your Sound!“ could show how the interest field of music can be used as a vehicle to raise pupils' interest in technology and furthermore teach them technology with an appealing and participatory approach (Thaler & Zorn 2009). This interdisciplinary gender-sensitive technology learning process realized results from previous

studies and will be supported by MOTIVATION results as well: It enables upper secondary school pupils to make hands-on-experiences, to experience problem-based science and technology learning, to learn in teams, apply own competencies and experience SET as a topic with relevance to their everyday lives (ibid.). The knowledge about what technology-compatible interest fields young people have and where teachers can easily find those topics of interest (beside magazines and soap operas every popular youth media offers ideas) can be retrieved from WP2 results. Thus, the WP2 results and the approach of using pupils' interests as vehicles for SET education (Thaler & Zorn 2009) can be used as an additional recommendation for WP3 and the stakeholder group of teachers.

Keeping WP2 results in mind, it is also interesting what our adapted draw-a-scientist-test (of WP4) could show. Indeed, the analysis of the drawings exemplified that many pupils' perceptions reflect a narrow picture combined with existing stereotypes of these fields (Thaler & Dahmen 2009b). That for instance German and Austrian girls more often draw a female scientist as boys (ibid.) is a validation of Steinke et al. (2007) whose study revealed that in 50% of the girls' drawings female scientists could be identified compared to 12,5% of the boys' drawings. However, it is striking that the majority of our drawing interviewees seem to have not too much clue about SET. They use certain symbols like vials to add a scientific meaning to a stick figure or they draw a person – a man – in a lab coat with glasses. Their drawings mirror certain images of SET, and only very seldom the persons in the drawings have a connection to the other drawn SET symbols or tools, in the most drawings the scientists and engineers do not touch their professional instruments, they are passively standing beside their SET objects and if those objects were not there, you would not identify them as scientists or engineers – like in the youth magazines SET artefacts serves as props.

One overall conclusion of MOTIVATION is that especially technology plays an important role in young people's lives, they perfectly natural use information and communication tools. Grossegger and Heinzlmaier (2007) even say in their current study about Austrian youth that leisure time of today's young people consist of people plus media plus technology. Young people use technology to expand their communication zone (ibd.).

No wonder that those technological devices are part of media representations as well. Youth magazines and soap operas have lots of different possibilities to embed SET as meaningful topics. But only few producers use this chance, like in a job special section of the German youth magazine "BRAVO" (which could be further improved with gender expertise) or for an explosive storyline in the French soap opera "Plus Belle La Vie". Most youth media represent SET (mostly technology) in an accessory-style, like clothes or furniture they are used in the stage set of TV scenes or magazine pictures to represent modernity, where unfortunately the message too often is that possessing is more important than using and understanding (Thaler et al. 2009).

7. Recommendations

A first and obvious recommendation is that youth media producers, especially soap producers and soap authors could need some support to integrate SET in a meaningful and less stereotypical way in the soap. The story has not to become boring and complex by doing so, on the contrary the stories would win because of a new pool of situations and characters. TV

producers could use industries' and universities' support³ in order to create interesting characters who act a little more like real people, whose every day lives at home, at school or at work, provides them with new challenges (Davidson 2009).

TV series like "Emergency room" and other medical drama series could show that realistic presentations of professional spheres are compatible with dramatic elements of love and crime stories. But there is one objection, that those series could not be compared with daily soap operas, as these series are only broadcasted once a week and only several weeks (during one season). So maybe the demands on soap operas should be not as high because of lower time and financial resources of daily soap operas. Nevertheless, the inclusion of SET related consultants (with gender expertise!) could improve the presentation of SET in daily soaps and bring new ideas for update explosive stories like in the French soap "Plus Belle La Vie" (Thaler et al. 2009).

A further recommendation is that magazines and especially soap operas should integrate generally more diverse and realistic job images, and especially SET related professions (see also Dostal & Troll 2005, Dahmen 2009, Davidson 2009), because they actually transmit most job information of popular TV programmes (Dostal 2006). Overall about 90% of jobs presented in soap operas belong to the service sector, so this branch is clearly overrepresented in TV (MMB Trendmonitor 2004). Thus in the seven analysed soap operas, we found restaurants were no one ever cooks, advertisement offices, were no computers are used or photographers who never use a camera. Dahmen (2009) refers in her German soap analysis to two studies which underline the importance of offering more realistic job images: A Belgian study proved that the audience' perceptions about specific occupations (midwives, veterinarians and para-commandos) turned to get more positive after regular watching the related TV-shows (Van den Bulck & Beullens 2007). And Maya Götz (2003) identified that soaps have a high potential to influence girls' socialisation, but the danger of more effective stereotypes and clichés of the soaps is evident.

Another recommendation is that SET must be connected to topics which are relevant for the audience. We live in a technological society; therefore it is not very difficult to find technological examples of our everyday's lives. Thinking of social and ethical impacts of SET and environmental issues is just the beginning. Many books tell dramatic stories around SET like novels of Michael Crichton and Carl Djerassi, who invented the genre of "science-in-fiction" (http://de.wikipedia.org/wiki/Carl_Djerassi). Both of them made science explicitly the theme of their books, Crichton told stories about dinosaur cloning, global warming, nanotechnology, time travel, animal behaviour, and human genetics (Grazier 2008). Djerassi additionally created many interesting female characters in his books (Gehrke 2008). And as youth media want to reach young people these new SET topics definitely have to include teenager's interests (Dahmen & Thaler 2009; Thaler & Dahmen 2009a+b) and leisure topics like music to SET (one practical example: Thaler & Zorn 2009).

And finally, youth magazines as well as soap operas and all popular youth media should be aware of their influence on perpetuating stereotypical gender knowledge (Thaler 2010). Especially soap operas are very often watched by young girls and could easily break up with

³ Stern and her colleagues (2007) argue that actually industry plays for instance via product placement a not unimportant role in soap opera authoring.

some traditional gender roles by creating female role models or “sheroes” as Karin Lenzhofer describes them in her book “Chicks rule!” (2006). Currently, there is a lack especially of SET related female role models (Becker 2009).

So, why not creating a female character, who is smart, earns a good salary with her SET job and has a happy private life? Of course she has small challenges in her job and of course there is plenty of room for some solvable problems in a normal happy life as well. She does not have to be an unrealistic super-person, but she could have a good job life and a good private life as well. In too many series especially the female characters had to give up one for the other, but: Why not aiming on having it all? The female audience would love such a role model, with whom they can identify and look up to.

References

- Alemany, Carme (2008). Quantitative media analysis: Spain. Internal Report. Available in members-area of www.motivation-project.com [12.02.2009].
- Alemany, Carme (2009). DRAFT WP2 MEDIA ANALYSIS: SOAP ANALYSIS. SPAIN. Internal Report. Available in members-area of www.motivation-project.com [03.11.2009]
- Becker, Frank Stefan (2009). Why not opt for a career in Science and Technology? An analysis of potentially valid reasons. In: Maartje van den Bogaard, Erik de Graf & Gillian Saunders-Smiths (eds.). Proceedings of 37th Annual Conference of SEFI. "Attracting young people to engineering. Engineering is fun!", 1st-4th July 2009, Rotterdam. CD-Rom. ISBN 978-2-87352-001-4.
- Bohnsack, Ralf (2007). Die dokumentarische Methode in der Bild- und Fotointerpretation. [The documentary method in the interpretation of pictures and photographs.] In: Ralf Bohnsack, Iris Nentwig-Gesemann & Arnd-Michael Nohl (eds.). Die dokumentarische Methode und ihre Forschungspraxis. Grundlagen qualitativer Sozialforschung. Wiesbaden: Verlag für Sozialwissenschaften., S. 69-92.
- Bohnsack, Ralf (2009). Qualitative Bild- und Videointerpretation. [Qualitative picture- and video-interpretation.] Opladen & Farmington Hills: Barabar Budrich Verlag.
- Bulck, Jan Van den and Beullens, Kathleen (2007). The Relationship between Docu Soap Exposure and Adolescents' Career Aspirations. In: European Journal of Communication, Vol. 22, No. 3, pp. 355-366.
- Chagheri, Parissa (2005). Die Sprache in Mädchenzeitschriften. Eine sprachwissenschaftliche Untersuchung von BRIGITTE YOUNG MISS und BRAVO GIRL. [The language in girls' magazines. A linguistic study about BRIGITTE YOUNG MISS and BRAVO GIRL.] In: http://www.linglit.tu-darmstadt.de/fileadmin/linglit/sprache/download/dox/chagheri_p.pdf [2. 4. 2008]
- Dahmen, Jennifer (2008a). Quantitative media analysis: Germany. Internal Report. Available in members-area of www.motivation-project.com [12.02.2009].
- Dahmen, Jennifer (2008b). Qualitative media analysis for Germany: SET and gender in youth magazines. Internal Report. Available in members-area of www.motivation-project.com [12.08.2009].
- Dahmen, Jennifer (2009). MOTIVATION – German soap analysis (WP2). Internal Report. Available in members-area of www.motivation-project.com [03.11.2009]
- Dahmen, Jennifer & Thaler, Anita (2009). Image is everything! Is image everything?! About perceived images of science, engineering and technology. In: Maartje van den Bogaard, Erik de Graf & Gillian Saunders-Smiths (eds.). Proceedings of 37th Annual Conference of SEFI. "Attracting young people to engineering. Engineering is fun!", 1st-4th July 2009, Rotterdam. CD-Rom. ISBN 978-2-87352-001-4. [Reviewed.]
- Davidson, Bodil (2008). Quantitative media analysis: Sweden. Internal Report. Available in members-area of www.motivation-project.com [12.02.2009].
- Davidson, Bodil (2009). MOTIVATION (WP2) – Swedish soap opera analysis. Internal Report. Available in members-area of www.motivation-project.com [03.11.2009]
- Dostal, Werner (2006). Der Einfluss des Fernsehens auf das Berufswahlverhalten. In: Bley, Nikolaus & Rullmann, Marit (eds.). Übergang Schule und Beruf. Aus der Praxis für die Praxis – Region Emscher-Lippe. Wissenswertes für Lehrkräfte und Eltern. Recklinghausen, S. 305-314.

- Dostal, Werner & Troll, Lothar (eds., 2005). Die Berufswelt im Fernsehen. Beiträge zur Arbeitsmarkt- und Berufsforschung 292. Nürnberg.
- European Commission (1999). Images of women in the media. Report on existing research in the European Union. Luxembourg: Office for Official Publications of the European Communities.
- European Commission (2001). Eurobarometer 55.2 – Europeans, Science and Technology. In: http://ec.europa.eu/public_opinion/archives/ebs/ebs_154_en.pdf [22.5.2007]
- European Commission (2004). “Europe needs more scientists” – Increasing Human Resources For Science And Technology. In European Communities (eds.). Report of the High Level Group on Human Resources for Science and Technology in Europe. Chaired by Prof. José Mariano Gago. Luxembourg: Office for Official Publications of the European Communities. In: http://ec.europa.eu/research/conferences/2004/sciprof/pdf/final_en.pdf [12.9.2009]
- Flicker, Eva (2005). Representation of Women Scientists in Feature Films: 1929 to 2003. In: Office of Science & Technology (eds.): Bridges, Vol. 5.
- Gehrke, Ingrid (2008). Der intellektuelle Polygamist: Carl Djerassis Grenzgänge in Autobiographie, Roman und Drama. Berlin: Lit Verlag.
- Göttlich, Udo, Krotz, Friedrich & Paus-Haase, Ingrid (2001, Eds.). Daily soaps und daily talks im Alltag von Jugendlichen: eine Studie im Auftrag der Landesanstalt für Rundfunk Nordrhein-Westfalen und der Landeszentrale für Private Rheinland-Pfalz. Opladen: Leske + Budrich (Schriftenreihe Medienforschung der Landesanstalt für Rundfunk Nordrhein-Westfalen; 38).
- Götz, Maya (2003). Was suchen und finden Mädchen in Daily Soaps? [What do girls look for and find in daily soaps?] In: Renate Luca (eds.): Medien Sozialisation Geschlecht. Fallstudien aus der sozialwissenschaftlichen Sozialforschung. München: KoPäd 2003, pp. 99-110.
- Grazier, Kevin R. (2008). The Science of Michael Crichton: An Unauthorized Exploration into the Real Science behind the Fictional Worlds of Michael Crichton (Science of Pop Culture series). Benbella Books.
- Griffin, Robert J., Sen, Shaikat and Plotkin, Rhonda (1994). Sex, Schemata, and Social Status: TV Character Identification and Occupational Aspirations among Adolescents. Differences that make a difference: examining the assumptions in gender research. L. H. Turner. Westport, Conn., Bergin & Garvey: 85-97.
- Grossegger, Beate (2005). Schriftenreihe Jugendpolitik: Medien und Technologie. [Series youth politics: media and technology.] Wien: BMSG.
- Grossegger Beate (2006). Junge Frauen und Männer in Österreich. Zahlen und Fakten. Wien: BMSG.
- Grossegger, Beate & Heinzlmaier, Bernhard (2007). Die neuen vorBilder der Jugend. Wien: G&G Verlag.
- Hannover, Bettina & Ursula Kessels (2004). "Self-to-prototype matching as a strategy for making academic choices. Why high school students do not like math and science." Learning and instruction 14. pp. 51-67.
- Hepp, Andreas & Winter, Rainer (2008). Kultur – Medien – Macht. Cultural Studies und Medienanalyse. Wiesbaden: Verlag für Sozialwissenschaften.
- Herrmann, Mareike (1999). “Feeling Better” with Bravo: German Girls and Their Popular Youth Magazine In: Sherrie A. Inness (ed.). Millennium Girls: Today's Girls Around the World. Rowman & Littlefield Publishers, pp. 213-242.

- Koľveková, Gabriela (2008). WP2 analysis Slovakia. Study of images of SET in youth magazines. Content analysis of relevant magazines (popular with young people) with special focus on genderedness of contents. Internal Report. Available in members-area of www.motivation-project.com [12.08.2009].
- Koľveková, Gabriela (2009). WP2 Report on soap analysis – Slovakia. Internal Report. Available in members-area of www.motivation-project.com [03.11.2009]
- Mayring, Philipp (1997). *Qualitative Inhaltsanalyse. Grundlage und Techniken*. Weinheim: Deutscher Studien Verlag.
- Medienpädagogischer Forschungsverbund Südwest (2007). JIM Studie 2007, Jugend, Information, (Multi-) Media. Basisuntersuchung zum Medienumgang 12-19jähriger. [JIM-Study 2007; Youth, Information, (Multi-) Media. Basis research about media use of 12-19 years old teenagers]. In: <http://www.mpfs.de/fileadmin/JIM-pdf07/JIM-Studie2007.pdf> [25.3.2008]
- MMB-Trendmonitor (2004) Dream jobs for all? Representation of jobs on TV and consequences for job choices – results of a pilot study. In: <http://www.mmb-institut.de/2004/pages/projekte/arbeitsmarktforschung/a6kurz.pdf> [25.3.2008]
- Mogendorff, Karen (2008). Genderedness of SET images in Dutch youth magazines *Girlz!* and *Quest*. Internal Report. Available in members-area of www.motivation-project.com [12.08.2009].
- Mühlen Achs, Gitta (1996). „Schön warten auf den Richtigen?“ Die Inszenierung heterosexueller Romanzen in der Jugendzeitschrift BRAVO. In: Margrit Lenssen, Elke Stolzenberg (eds.). *Schaulust: Erotik und Pornographie in den Medien*. Opladen: Leske + Budrich, pp. 11-36.
- OECD (2007). PISA 2006: Science Competencies for Tomorrow's World. Volume 1: Analysis. In: <http://www.pisa.oecd.org/dataoecd/30/17/39703267.pdf> [3.3.2008]
- Osborne, Jonathan; Simon, Shirley; Collins, Sue (2003). Attitudes towards science. A review of the literature and its implications. In: *International Journal of Science Education*, 25 (9), pp. 149-1079.
- Pinault, Cloé (2008a). Quantitative media analysis: France. Internal Report. Available in members-area of www.motivation-project.com [12.02.2009].
- Pinault, Cloé (2008b). WP2 MOTIVATION. Magazine: Qualitative Analysis. ENSC TEAM. Internal Report. Available in members-area of www.motivation-project.com [12.08.2009].
- Pinault, Cloé (2009). WP2 SOAP ANALYSIS – COMPREHENSIVE REPORT. FRANCE. Internal Report. Available in members-area of www.motivation-project.com [03.11.2009]
- Rommes, Els; Overbeek, Geertjan; Scholte, Ron; Engels, Rutger; De Kemp, Raymond (2007). 'I'M NOT INTERESTED IN COMPUTERS!': Gender-based occupational choices of adolescents. In: *Information, Communication and Society*, Vol. 10, Nr. 3, pp. 299-319.
- Rommes, Els (2002). *Gender Scripts and the Internet; The Design and Use of Amsterdam's Digital City*. Enschede: Twente University.
- Scheer, Lisa & Thaler, Anita (2009a). Soap opera analysis – FAQ. Internal document. Available in members-area of www.motivation-project.com [23.04.2009]
- Scheer, Lisa & Thaler, Anita (2009b). MOTIVATION (WP 2) – Austrian soap opera analysis. Internal Report. Available in members-area of www.motivation-project.com [03.11.2009]
- Schönberger, Mariska & Rommes, Els (2009). MOTIVATION – Dutch soap analysis (WP2). Internal Report. Available in members-area of www.motivation-project.com [03.11.2009]

- Steinke, Jocelyn et al. (2007). Assessing Media Influences on Middle School Children's Perceptions of Women in Science Using the Draw-A-Scientist Test (DAST). In: Science Communication, Volume 29, pp. 35-64.
- Stern, Barbara B., Russell, Cirstel Antonia & Russell, Dale (2007). Hidden persuasions in soap operas: damaged heroines and negative consumer effects. In: International Journal of Advertising, 26(1), pp. 9-36.
- Thaler, Anita (2008). Geschlechterwissen in virtuellen Lernräumen, in: Pauschenwein, Jutta / Jandl, Maria (eds.). 10 Jahre E-Learning in Österreich. Festschrift zum zehnjährigen Bestehen des „ZML – Innovative Lernszenarien“ an der FH JOANNEUM, Graz, 47–58. Online: http://www.fh-joanneum.at/global/show_document.asp?id=aaaaaaaaacmwrw [10.11.2009].
- Thaler, Anita (2008a). Quantitative media analysis: Austria. Internal Report. Available in members-area of www.motivation-project.com [12.02.2009].
- Thaler, Anita (2008b). WP2 qualitative media analysis: SET and gender in youth magazines. Austria. Internal Report. Available in members-area of www.motivation-project.com [12.08.2009].
- Thaler, Anita (2009). “Learning technology?” About the informal learning potential of youth magazines. In: Daniela Freitag, Bernhard Wieser & Günter Getzinger (eds.) Proceedings 8th Annual IAS-STS Conference on Critical Issues in Science and Technology Studies. Graz: CD-Rom. ISBN: 978-3-9502678-1-5. Download: http://www.ifz.tugraz.at/index_en.php/article/articleview/1817/1/58 [28.10.2009]
- Thaler, Anita (forthcoming, 2010). „Learning Gender” – Das informelle Lernpotential von Jugendmedien. In: Hanna Rohn, Lisa Scheer, Eva Zenz (eds.). Sammelband zur FrauenFrühlingUniversität Graz 2009. Graz: Planet Verlag.
- Thaler, Anita & Dahmen, Jennifer (2009a). Science Education in Europe – Images, Approaches, Innovations. In: Freddy Malpica, Bill Tait, Andrés Tremante & Friedrich Welsch (eds.). Proceedings of the 2nd International Multi-Conference on Society, Cybernetics and Informatics. Volume I. July 10th - 13th, 2009 – Orlando, Florida, USA, p. 220-224. ISBN 1-934272-72-8. [Reviewed.]
- Thaler, Anita & Dahmen, Jennifer (2009b). Images of science, engineering and technology – a question of gender? IFZ – Electronic Working Papers 1-2009. ISSN 2077-3102. In: <http://www.ifz.tugraz.at/index.php/article/articleview/1621/1/154> [21.9.2009]
- Thaler, Anita; Dahmen, Jennifer & Pinault Cloé (2009). European media images of science, engineering and technology. IFZ – Electronic Working Papers 2-2009. ISSN 2077-3102. In: <http://www.ifz.tugraz.at/index.php/article/articleview/1621/1/154> [16.11.2009]
- Thaler, Anita & Scheer Lisa (2009a). WP2: Methodology for qualitative soap-analysis. Internal Document. Available in members-area of www.motivation-project.com [24.02.2009].
- Thaler, Anita & Scheer Lisa (2009b). MOTIVATION WP2: soap opera analysis guidelines. Internal Document. Available in members-area of www.motivation-project.com [15.04.2009].
- Thaler, Anita & Zorn, Isabel (2009). Attracting teenagers to engineering by participatory music technology design. In: Maartje van den Bogaard, Erik de Graf & Gillian Saunders-Smiths (eds.). Proceedings of 37th Annual Conference of SEFI. “Attracting young people to engineering. Engineering is fun!“, 1st-4th July 2009, Rotterdam. CD-Rom. ISBN 978-2-87352-001-4.

- Theunert, Helga & Gebel, Christa (2000, eds.). Lehrstücke fürs Leben in Fortsetzung: Serienrezeption zwischen Kindheit und Jugend. München: Fischer (BLM-Schriftenreihe; 63).
- Universidad Autonoma de Barcelona (2007). Study on the Current Trends and Approaches to Media Literacy in Europe. In: http://ec.europa.eu/avpolicy/media_literacy/docs/studies/study.pdf [2.3.2008]
- Urbančíková, Natasa & Kořveková, Gabriela (2008). Quantitative media analysis: France. Internal Report. Available in members-area of www.motivation-project.com [12.02.2009].
- Van den Bulck, Jan; Beullens, Kathleen (2007). The Relationship between Docu Soap Exposure and Adolescents' Career Aspirations. In: *European Journal of Communication*, Vol. 22, No. 3, pp. 355-366.
- Wasburn, Mara H. (2004) Creating Positive Media Images of "Techy" Women: A Proposal to Viacom. (Unpublished Paper).
- Wetterer, Angelika (2008). Geschlechterwissen: Zur Geschichte eines neues Begriffs, in: Angelika Wetterer (Hg.). *Geschlechterwissen und soziale Praxis. Theoretische Zugänge – empirische Erträge*, Königstein/Taunus, 283–298.
- Whitelegg, Elizabeth; Holliman, Richard; Allgaier, Joachim; Hodgson, Barbara & Scanlon, Eileen (2006). Invisible witnesses? – Representations of women scientists, engineers and technologists on UK terrestrial television. Center for Research in Education and Educational Technology, The Open University, UK. In: <http://www.setwomenresource.org.uk/en/node/6797/> [01.03.08]
- Wicher, Magdalena Julia (2009). The psychological meaning of colour: A focus on gender and SET representations in youth magazines. In: Daniela Freitag, Bernhard Wieser & Günter Getzinger (eds.) *Proceedings 8th Annual IAS-STIS Conference on Critical Issues in Science and Technology Studies*. Graz: CD-Rom. ISBN: 978-3-9502678-1-5. Download: http://www.ifz.tugraz.at/index_en.php/article/articleview/1817/1/58 [28.10.2009]

Annexe

WP2 media analysis: youth magazine analysis document

Please follow these guidelines:

- Remember the topic of this analysis is the **image of SET** (and not only the image of scientists!), that means you probably have to analyse mostly **representations of technological products**.
- The **minimum-size** of the analysed pictures should be one eighth (1/8) of a page that means at least 7 x 10 cm!
- The front page has page number 1. The back of the cover is the last page, so the number of the last page must be the same as the total page number.
- You can write in the document, where you see this  and you can put a tick in, where you see this . (In some cases you can make more than one tick, for instance at the "position of the picture", if the picture is top left and top right, make two ticks.)
- Please save each analysis-document matching the SET-picture (**country_number.jpg**), so please name it **country_number.doc** (e.g. Austria_3.doc). All your analysis-documents should be numbered consecutively.
- Collect all your data (analysis-documents and matching picture-files) on a **CD-Rom** and send it to us until the **15th of December 2008**: IFZ, Anita Thaler, Schlögelgasse 2, 8010 Graz, Austria

Thank you!

SET representation nr.													
Magazine name: Issue:	Country: Name of the researcher:												
Page number from (total number of magazine pages).													
Step 1: Identification of SET representation													
Please scan the whole respective original SET representing picture (and please add it as a separate file, named country_number.jpg, e.g. Austria_3.jpg). If there is an additional SET-related headline to the picture, quote the text here (in English):													
Size of the whole picture: <input type="checkbox"/> Full page <input type="checkbox"/> Half page <input type="checkbox"/> Quarter page <input type="checkbox"/> Less than quarter page	Position of the picture: <table border="1"> <tr> <td colspan="2"><input type="checkbox"/> Left page</td> <td colspan="2"><input type="checkbox"/> Right page</td> </tr> <tr> <td><input type="checkbox"/> Top left</td> <td><input type="checkbox"/> Top right</td> <td><input type="checkbox"/> Top left</td> <td><input type="checkbox"/> Top right</td> </tr> <tr> <td><input type="checkbox"/> Bottom left</td> <td><input type="checkbox"/> Bottom right</td> <td><input type="checkbox"/> Bottom left</td> <td><input type="checkbox"/> Bottom right</td> </tr> </table>	<input type="checkbox"/> Left page		<input type="checkbox"/> Right page		<input type="checkbox"/> Top left	<input type="checkbox"/> Top right	<input type="checkbox"/> Top left	<input type="checkbox"/> Top right	<input type="checkbox"/> Bottom left	<input type="checkbox"/> Bottom right	<input type="checkbox"/> Bottom left	<input type="checkbox"/> Bottom right
<input type="checkbox"/> Left page		<input type="checkbox"/> Right page											
<input type="checkbox"/> Top left	<input type="checkbox"/> Top right	<input type="checkbox"/> Top left	<input type="checkbox"/> Top right										
<input type="checkbox"/> Bottom left	<input type="checkbox"/> Bottom right	<input type="checkbox"/> Bottom left	<input type="checkbox"/> Bottom right										

Step 2: Contextualisation of SET representation

In which **part** of the magazine is the picture?

- Journalist magazine content
 article / story / poster
 movie description
 special SET section
- Advertisement / product placement
 for a SET product
 for another product

Role of SET in the picture:

- SET in **background** / on the side of the picture
OR
 SET is the **main** topic of the picture (That means the represented SET could not be replaced by another thing, for instance flowers, without distorting the meaning of the picture.)

Colour code: What are the main colours of the picture?

- | | |
|---|---|
| <input type="checkbox"/> <input type="checkbox"/> White | <input type="checkbox"/>  Pink |
| <input type="checkbox"/>  Yellow / Orange | <input type="checkbox"/>  Purple |
| <input type="checkbox"/>  Red | <input type="checkbox"/>  Brown |
| <input type="checkbox"/>  Green | <input type="checkbox"/>  Black / Grey |
| <input type="checkbox"/>  Blue / Turquoise | <input type="checkbox"/> other: |

What is the main **purpose** of SET in this picture?

- | | |
|---|---|
| <input type="checkbox"/> SET as accessories (for instance for models) | <input type="checkbox"/> Helping others / saving the planet |
| <input type="checkbox"/> Leisure activities / sport | <input type="checkbox"/> Learning / working: |
| <input type="checkbox"/> Beauty / fashion | <input type="checkbox"/> SET education / SET profession |
| | <input type="checkbox"/> Other educational / professional field |
| | <input type="checkbox"/> other purpose: |

What **field** of SET is shown?

- Music-technology
 Cell-phone / handheld
 Computer
 (Video) camera / TV
 Video game / toys
 Vehicle (car, bike, ...)
 other:

SET is shown **without person(s)**

OR

- SET is shown **with person(s)**:
 Female(s): How many?
 Male(s): How many?

→ see **Step 3**

SET is **represented** as a:

- job** (engineer, scientist)
 product (technological product)
 other:

Step 3: Genderedness of SET representation

Please describe the role of shown female(s) and/or male(s) in the respective SET picture.

Are females and males doing the same? Are they scientists or engineers or SET users? Are they competently using or discussing SET or are the shown technological products accessories for models? Who is actively using SET (for instance working on computer)? Who is passive (for instance just watching at the monitor of another person who uses the computer)? Are there other important factors in the SET representation (cultural background/ethnicity, heterosexual normativity, age, etc.)?

WP2 media analysis: Soap SET scene analysis sheet:

SET scene nr.			
Soap opera name:		Country:	
Episode nr.:		Name of the researcher:	
Total number of scenes in that episode			
Step 1: Quantitative analysis of SET			
Which SET?	How many seconds is each SET visible?*	SET in background?***	SET in foreground?***
	sec.	<input type="checkbox"/>	<input type="checkbox"/>
	sec.	<input type="checkbox"/>	<input type="checkbox"/>
	sec.	<input type="checkbox"/>	<input type="checkbox"/>
	sec.	<input type="checkbox"/>	<input type="checkbox"/>
	sec.	<input type="checkbox"/>	<input type="checkbox"/>
	sec.	<input type="checkbox"/>	<input type="checkbox"/>
	sec.	<input type="checkbox"/>	<input type="checkbox"/>
<p>* Length of visibility of each SET: Time for each SET you can find in one scene. Add this in your quantitative analysis of your report (B 1 – see WP2_soap analysis_AT_16_04_2009.pdf). Which SET has been shown how long?</p> <p>**Role of SET in the scene:</p> <ul style="list-style-type: none">  SET in background means that technological artefacts are part of the setting, but not in use or objective of a discussion.  SET in foreground means that people are dealing with technological artefacts, talking about SET or a SET professional is in a scene <p>→ For all “SET in foreground” go on with qualitative analysis:</p>			
Step 2: Qualitative analysis of scenes with SET in foreground			
<ul style="list-style-type: none"> ▪ Formulating interpretation <p>Describe the topic of the scene as detailed as possible: What SET can be seen? What are people doing and saying?</p>			
<ul style="list-style-type: none"> ▪ Reflexive interpretation <p>What is the SET-related message of the scene? (What does the scene imply about the knowledge and abilities of the portrayed people?)</p> <p>What is the gender-related message of the scene? (How do females/males handle presented SET? What can be said about gender and SET in this scene?)</p>			
© Anita Thaler, 2009			