

Final project - Work plan Version 2.0
„Design Paradigm Shifts“ (draft title)
Piet Zwart Institute, Media Design
by Jorrit Sybesma, January/February 2007

This work plan for my final project deals with the following aspects in the order as they are presented beneath:

- [1] Short project description
- [2] Ideas, motivations and background
- [3] Project and context
- [4] Technical description
- [5] Practical implementation
- [6] Social interface
- [7] Generative algorithms
- [8] Practical example
- [9] Printing and exhibition
- [10] Project management

[1] Short project description

„Design Paradigm Shifts“ is an alternative design-proposal for the Media Design graduation catalogue. The catalogue is generated using non-traditional design tools and methods. For each individual student, an algorithm is developed that represents a part of their working process or acts like a mechanism based on their projects. Every algorithm determines the composition of elements, the structural organisation of information and the actual behavior of the software when the catalogue is generated. That process of generating is a continuous cycle, that will be frozen for a moment when there is a print-request done for a copy of the graduation catalogue. This design-approach has the aim to reflect the actual working processes inside the institute of students and the curriculum as a whole, represented in the process of generating the catalogue itself.

[2] Ideas, motivations and background

The aim of the project is to create an alternative graduation catalogue. The catalogue should be a reflection of the processes inside the Media Design department of the Piet Zwart Institute. These processes are reflected by algorithms that determine the composition of elements, organisation of information and the actual behavior of the software when the catalogue is generated. For each and every student an algorithm is developed that represents a part of their working process or acts like a mechanism based on the core principles of their projects. On the other hand the catalogue is a process itself, it is never finished and will produce continuously (until unplugged) new and different catalogues when frozen from time to time to get printed. The designer changes from role and acts as a curator, instead of the traditional „dictator“. The computer becomes a crucial part and is pushed to the front end of the design process, it is now a device beyond productivity running software-tools part of the course curriculum, curator and computer share the responsibility for the „end-result“. The relation between the catalogue, the contents that shapes it (literally) through the tools that generated it and the institute itself, should be made obvious through this approach.

Although part of the aim of this project is breaking with traditions in the usual (graphic) design process, the part of „consulting the client of subject“ has to be maintained. Although in a different form. The information that is necessary to create the aforementioned „generative“ algorithms, has to be extracted from various conversations with every student. Those conversations will not be traditional in the sense that the subject of discussion is my own work, but we will have a conversation on what the students are busy with. I do think it is necessary to have these meetings during the project, in order to be able to make a translation from parts of their projects into 'generative' code for the creation of the catalogue (more on the student interviews in chapter [6] "Social interface"). The algorithm can be based upon a specific quality (whether that is destructive - what opens up the possibility for viral behaviour - or not) in the working process of a student or can be a translation of a (recursive) mechanism (a recognisable transformation, action or process) in the final project of that student (more on the issue of generative algorithms in chapter [7] "Generative algorithms") . Images in the form of photographs or screen shots of the projects of students, can be supplied at any time during the process, that is a positive side-effect of this open approach and print on demand principle.

To reflect more of the politics inside the Media Design course, the content for the catalogue in the form of texts, can partly be extracted from one of the core systems of the curriculum: the group critiques. Every student has to prepare for some of these group discussions - gatherings where also first years take part of - and often these sessions seem to be very productive. (Probably I will make notes during the these sessions, instead of making recordings. Recording these sessions could possibly have influence on students behaviour - it could form a barrier, that could prevent some people from speaking, and that is opposed effect of what my intentions are - which is common when things in classrooms are taped.) These text could function on a meta-level through the catalogue and give - in addition to more general project descriptions - a more detailed, honest, interesting and open insight into the processes at the Piet Zwart Institute. Processes reflected by processes and a process as a product.

In the design process and practice of contemporary graphic designers the use of the computer is common, necessary and often similar. They use the computer simply as a transformation box for getting their ideas from thought on paper to ink on paper. The electronic trajectory adds nothing to the process of designing, it is purely a matter of productivity, what I consider as a sad waste of exiting possibilities. The software in the box share the same principles and terminology as the machines and tools had in the analogue era of printing. New options in the software are mostly either related to pure productivity or to deliver specific tricks and produce visual noise in contemporary graphic design. Within this project I try to use the computer to its extends, I do not use it as a simple transformation box during a select period of time during the process of designing and printing. I close, or actually minimise the gap between creation and production. Nowadays printing technologies support that strategy. Capture, freeze a moment in time, quite similar to the graduation (show) itself.

Another part of the background and motivation is that it bothers me extremely that in the environment of design academies it is the common policy to train students without any criticism in the use of specific proprietary ridiculously expensive software only. For companies like Adobe, design academies are potential gold mines. For a graphic designer nowadays the process of graphic design is often only connected to the use of Adobe Indesign or Illustrator. While the essence should be on educating and learning the actual process of designing, regardless the use of particular software. Students learn using software, instead of designing. (Possible subject for essay).

As a consequence of this educational approach, the vast majority of students is not aware of the traditions, heritage and craftsmanship of (typo)graphic design. To make that clear: the origin of the terms used in software for graphic design purposes is not understood anymore and is only associated with a few clicks on an unclear functionality in that software package. It would be a good lesson anyhow for students at design academies to work a few times with dinosaur software like Groff, just to get the conceptual knowledge of the meaning of the terms and to take the use of specific elements or functions into consideration before just applying it with no purpose only because it can easily be done through clicking in the windows and menus of Indesign. A side effect is that one has to design, prior to using the computer.

In relation to the project: using so called generative algorithms suggest that the craftsmanship context is ignored. But I see it different, in order to create those algorithms, in-depth knowledge of the specific markup-language (typesetting- and document processing instructions) has to be gained. In order to do so, first focussing on the details of the typesetting rules and restrictions is required. Next step in the process is taking a distance and work on the algorithms that require the same level of craftsmanship (in order to get it working) as the typesetting and composition of the graduation catalogue. Design and technology are heavily intertwined in this project.

Many graphic designers suffer from not knowing the exact meaning of the terms and relying too much on proprietary software, I do as well. Therefore part of this final project was (and is) to escape from certain graphic design paradigms. Not only because of the constraints (limitations) of the specific software, but also because of the conception that a graphic designer should be able to adopt itself to changes in their working environment subject, project and (very formalised) client. Designing the catalogue with Adobe Indesign would be totally inappropriate.

And finally it would be in line with a good Dutch tradition that - in the future - also here at the Piet Zwart Institute, students - with their specific expertise - from within the course, design their own graduation catalogue for their institute...

[3] Project and context

Related to my project is (in some way) the work done by Luna Maurer. An Amsterdam-based from origin German graphic designer. She graduated a few years ago at the Sandberg Institute and is now collaborating with graphic and media designers (Jonathan Puckey and Timo Hofmeijer) mainly for cultural institutes in the Netherlands. Her projects or work is not really similar when it comes to aesthetics and so on, but probably her design methods and using the computer as a more important part of the design process than traditional graphic designers do. The use of „systems that create form“ is something that is a recurring theme in her work. I am not really convinced by her arguments of using those scripting systems, in her work it is almost a gimmick, without a conceptual need. There is no particular reason she uses scripting languages other than just her personal preferences. But mainly the idea of shared responsibility between human and computer, the interplay during the decision-making process is something I consider as playful, inspiring and useful. (online reference: <http://www.poly-luna.com/> or <http://www.poly-xelor.com/>)

I also would like to refer to a project by the in the Netherlands based Korean designers Sulki & Min Choij done for the exhibition of the Fusedspace Database in „Stroom“ in The Hague in 2005. Interesting here is to see the intentions of using a combination of printed and digital media. During the exhibition visitors could use a handheld device to scan codes related to

exhibited work. At the end of the exhibition a printer spitted out the reference to those projects, in the form of URL's, a nice combination of pre-printed and print-on-demand solutions. The system is quite straight forward and does not deliver interesting result when it comes to content and aesthetics. Most interesting is the idea that print design is not constrained to the traditional production process of designing and printing with the computer as the main device in that trajectory. This system for print-on-site was developed in collaboration with Dan Michaelson and Tamara Maletic. (online reference: <http://www.sulki-min.com/>)

Finally I would like to refer to an interesting project in development by Richard Vijgen (student at the Jan van Eyck Academy, Maastricht). He developed a functional installation „Realttime Bookdesign“, as a BA-graduation project. In this project he connected (parts of) the contents of the Project Gutenberg database to a generative system. This system created covers for the books based on an algorithm that selected „random“ styles. The installation was stretched to almost a performance of a production line, while visitors selected new covers and the printer was delivering the next book, he was binding the previous printed books. One after the other. He continues working on this project at the Jan van Eyck Academy as „The Tomorrowbook“-project.

[4] Technical description

First a technical description of how I imagine the project should work in the end, afterwards I will summarise and break the process up into small parts and steps.

The catalogue will be generated using a combination of various scripting languages, typesetting (mark-up) software, macro packages and image editing software. All the tools involved are software packages without a Graphical User Interface, in a previous paragraph that choice is substantiated. With these tools the source material will be used, edited, composed, converted and printed.

That 'raw' source material that is used to feed the catalogue generating process are plain text files for the texts (editorial layer) in the catalogue and EPS-images (is a technical requirement) for the use of images. Other plain text files containing mark-up rules (used in Groff with -mom macros, so called processing instructions) are used to define composition, aesthetics and typographic rules. Groff is used because of its 'open' structure (it style and typesetting definitions are simply plain text) and as a result of that its 'scriptability', Groff produces postscript files.

In the first phase of the process of generating the catalogue, individual students parts are created, whether that are pages or layers is not relevant yet at this point in time. But my intention is not to constrain information to specific pages. For this process specific algorithms (see: concept description) are used for each and every students part. Every algorithm is a translation of an interesting mechanism or part of the process in the project of each student into a (Python/bash)-script. Those algorithms determine composition, structure of information, aesthetics (et cetera) and behaviour (viral) during the process of creation of every specific part of the catalogue. This process differs from time to time (using different variables for the scripts), in the continuous (in theory an infinite process) production-cycle of the graduation catalogue.

After having those pages or layers (parts) generated separately, those will have to be joined together in order to have the catalogue complete as a whole. Ending up with one big postscript-file as a result, which will be converted to a PDF-printversion of the catalogue later on in the process. This whole back end is invisible for the user, the visitor of the exhibition.

The catalogue is generated continuously, delivering for each cycle of production a fixed number of files. Each individual file of this set is time-encoded at the moment of creation and has therefore an unique name and is easily identifiable. This set of files consists of a PDF-printversion of the catalogue, a JPEG-thumbnail of the catalogue and a PHP-file containing a reference to the thumbnail and a hyperlink to the PDF-printversion of the catalogue. This production process is done in the background.

During the same production cycle, the new edition of the catalogue is moved to the correct physical space within the filesystem, in order to be available for download and to be visible for those who view the catalogue-archive online. In order to make the newly generated version of the catalogue accessible through the HTML-interface, a reference to this catalogue (actually to the PHP-file containing the thumbnail and the hyperlink to the PDF-version of the catalogue) will be added to the index-page of the online archive.

The visible front end of the project consists of a web site (HTML), which is divided into two modes. In mode one the user is able to view the current catalogue (most recent generated) and in mode two the user can browse the online archive of all the previously generated catalogues (which can be viewed on 'catalogue-level' and 'student-level'). Clicking on one of the thumbnails of the catalogue in the archive or on the thumbnail of the current one, will open the enlarged PDF-printversion on a separate display (for exhibition, aesthetic and usability reasons), connected to the same computer the generating process is installed on. One is able to continue browsing the archive while viewing one catalogue in specific on the second screen. Connected to those two view-modes (archive and current) are the options to e-mail or to print a catalogue. And there is also a button visible, which will instruct the user (visitor) on using the printers and the system as a whole ("help"-function).

The e-mail option enables the user to mail the catalogue to a specific e-mail address. If one chooses to mail the catalogue - using the form presented online - not the entire catalogue is sent. Only the reference to the current catalogue is sent by mail. The current catalogue is the most recent one and is constantly a different one. So even the e-mailed catalogues are subject of change.

A single push on the print-button ('quick-print' or 'print', see chapter [9] "Printing and exhibition") on the other hand should execute the print command without any dialogue-screens or other forms of communication between user and computer and deliver a printed copy of the catalogue on demand. Depending on the shape of the catalogue, a few seconds later the print can be picked up from a location in sight of the machine.

A fully working (rapid) prototype that contains most of the described functionality has been developed over the last trimester and is presented during the last day of the „Command Line Culture“ thematic project in December 2006. This prototype functioned as a proof of concept and forms the basis for future developments.

[5] Practical implementation

Practically speaking, the projects technical infrastructure consists out of three main parts. In the overview below, I summarise for each part the specifics related to the practical implementation.

[1] „Generating part“

One-line description: Back end of the project.

Technically speaking:

- Using Python for the creation of algorithms (scripts with a specific behavior) that generate student specific composition information through the production of text files containing mark-up definitions. In the prototype bash-scripting was used as a temporary solution.
- Using bash-scripts to move and copy files to the correct location in the file system.
- Using Groff and typesetting macros for Groff (because of its typesetting capacities) in order to generate styling and composition definitions from plain text files to postscript files.
- Using ImageMagick to edit images and to create thumbnails for archive.

[2] „Assembling part“

One-line description: Connecting back end with front end.

Technically speaking:

- Using various postscript tools to assemble all separate pages or layers and join them.
- Using pstopdf (and other postscript editing tools) to create and convert postscript files into the Portable Document File format (PDF) for print purposes.
- Using bash-scripts to assemble, move, copy, time-code all files and clear temporary directories and files.

[3] „Presenting part“

One-line description: Front end / UI of the project.

Technically speaking:

- Using HTML, PHP and CSS to create an interface to the archive, and e-mail options to send the catalogue instead of printing it.
- Using (probably) a combination of GUI and bash-scripts to oppress dialogue-boxes during printing sessions for the catalogue.

During last trimester I gained sufficient knowledge about the use of Groff and typesetting macros to create documents up to a certain level of complexity. But there is still a trajectory of learning necessary to make more complex documents, that can be assembled, created using scripts. When it comes to resources: unfortunately there is not so much documentation about the use of Groff in this specific way, as far as I can oversee now. Things have to be learned through trial and error. There is a lot of documentation about Groff and macro-settings in general though.

Regarding the use of HTML and CSS, that will not be any problem, the skills I do have are sufficient for this project and are necessary in the last two parts of the project.

On the other hand my Python-programming skills are not really sufficient enough developed in order to really write (complex) scripts that perform tasks as described in the previous few paragraphs. Unfortunately I am not a fast learning student when it comes to gaining this specific kind of knowledge to overcome those technical obstacles. The scenario is either to work around it technically speaking (finding another scripting language, what I actually did during prototyping), or simply deal with it through a crash course study of Python on a

specific area. There are hand- and cookbooks on Python around at the PZI Library and on the Internet tutorials and manuals are available.

When it comes to the material resources (eg hardware), for the exhibition extra equipment is necessary: two DVI-compatible displays (LCD preferred) which can be connected at the same time to one single computer (my PowerBook, with dual-DVI capabilities). One display is necessary for displaying the interface of the online archive of catalogues, the second display is there to show the enlarged PDF-printversion of the catalogue.

The graduation catalogue archive runs on the local webserver of my machine and is therefore not visible to "the world". Nevertheless, the computer should be connected via an UTP-cable (ethernet, CAT5) to the Internet. This is a necessity, since the e-mail option in the archive requires a connection to send the URL of the graduation catalogue (as is described above in the technical description) and to upload a "current" PDF-file to a server to make it visible, although it does not need a "superfast" (upload-)connection.

For more details related the use of printers, see chapter [9] "Printing and exhibition". Probably a professional stapler or some kind of glue-binding-heating-machine is necessary to bind the graduation catalogues. I do happen to have a guillotine (to cut the paper).

[6] Social interface

The "social interface" (Florian Cramer) of this project is formed by the interviews I will have over the period of the next few months with my fellow graduate students. First a few words in general. I took the option into consideration to have a setting where I would meet multiple students at the same time, as a small group together. I changed that because I assume that because of the group setting, distraction is an easy escape. A group session might be more sociable, but I think - except for the factor of distraction - some people act differently in a group and might not be honest, or do not speak out loud about what is on their mind.

Multiple meetings aka interviews will be scheduled, depending on the progress I make - in extracting an algorithm - as a result of such a meeting. It can possibly happen that I need to have extra meetings with specific students, to extract what I need. See the schedule (in chapter [10] "Project management") for the proposed meeting moments. Multiple meetings are required after all, just to gather data of the students working processes, which simply can not be extracted from one meeting only. Students may give their feedback to my working process as well, and are allowed to comment to what I am working on. Nevertheless I consider myself here in the position to decide (although I will try not to be the "dictator", referring back to chapter [2] "Ideas, motivations and background") whether something is sufficiently reflecting a process or mechanism in specific, the opinion of my fellow students is of course taken into consideration.

The first interview with my fellow students will have the nature of a "getting to know" meeting. Of course I do have a vague idea of what other students are working on, from some better than others, the first meeting is really there to clarify a lot. Prior to those meetings I will ask students to send me either their workplan or a project description, just to prepare some 'basics' for those meetings. This first social interaction should preferably take place at the students' studio or working place. I am a fellow student, therefore I expect that students will be honest and open about their process and progress, I am not in the position and I have no intention to judge what they are doing, I am just an observer, we are in equal positions.

What I hope to extract from those meetings is not only something in the form of material resources, physical stuff, ready to be implemented in the graduation catalogue. It is probably even impossible to get such material during the first (early) visitation. What I do want primarily to extract from those conversations and visits is insight into the working process of the individual.

That working process is relevant and interesting and crucial here. The PZI is not a traditional design school and the background of the graduate students varies from person to person. That background has obviously major influences on the working process of students. Some people are quite trained in going through a formal design process, others find their solution in (total) chaos. Eventually in the best scenario, everyone will end up with something finished. Which then forms a facade that hides the crucial struggle that was necessary to get so far. That struggle, in other words process, contains valuable starting points for my work.

Related to information of and insight into the working process, questions regarding how the student in specific defines or characterises her or his role in the whole (design) process will be a substantial part of those interviews. It is of course totally voluntary for students to have those meetings and come up with answers or suggestions during this vulnerable phase of their working process. In addition to material of the project itself, students may also (or are asked for to) provide materials which relate to their project or process in a less direct way, things that form or are part of a contextual, relational framework for them, their work or their inspiration. The actual material, the physical substance, is their choice.

On the other hand there is an option to agree with my fellow students to send me every week during the whole trajectory, an item as a part or representation of a progression in their work in progress, all related to their final project. It can also be a simple item like a physical 'to-do-list', a little sketch, a drawing, a few words on paper, a screenshot, a photograph (of the studio), a sticky (a yellow piece of paper), a picture, a log entry, section of a diary, a "moblog", a receipt. All these objects seem meaningless in the end (when normally a clinical clean, glamorous, shiny catalogue is presented), when cleaning up the mess afterwards. By including those small items as a part of the graduation catalogue, they become (actually remain) part of the process. Sketch materials show often the work stripped from conventions, formalised issues, fashionable influences, often timeless and they provide a honest insight into the natural development - showing the transition from thought to project - students go through.

The second meeting will be used to clear up things that were not since the last interview, a first proposal of my interpretations (whatever state they are in) will be showed for feedback. This is also the opportunity for me to see more of the project of every student, they (probably and hopefully) should have made a lot of progress since the last meeting. This provides me insight into the technical mechanisms of the projects, which can be used as a part of the particular graphic design algorithms.

Finally the third meeting is there to wrap-up the whole process and have a final reflective talk with the students regarding their work(ing process) and my abstractions as a result of our previous meetings. This provides room for feedback. For more on the scheduled meetings see chapter [10] "Project management".

I understand that time is a precious thing, not only for me, but especially for those students that I have to ask for their time, effort, honesty and material resources. On one hand that could be considered as a problem, on the other it is also an obligation to keep things brief and prepare well for those meetings.

At the end of the project I will ask students to deliver a short project description and footage from their work. If students want to do so, they can even deliver images or photographs of their projects in the setting of the final show at WORM. The nature of the project - as I described earlier in this work plan - has a quite flexible deadline when it comes to the supplying of resource materials.

[7] Generative algorithms

First of all the term 'generative' can be confusing here. These algorithms are "able to produce" forms, following the literal definition of the term "generative". It is a system ("a process containing a set of rules") that is fed with variables and is able to create various graphic designs, constrained to the number of predefined possibilities: graphic design algorithms.

The choice for using algorithms can be elucidated on multiple conceptual levels. First of all: I think it is quite hard to reflect students' work, just by a picture and a few words of text. That is not challenging from the designers' perspective and it does not do any justice to the effort of the students. All the projects - as far as I can oversee now - contain code, procedures, mechanisms, algorithms, scripts, transitions, transformations, mark-up languages, variables, deal with dynamics, et cetera (actually the same technical components the graduation catalogue consists of). None of these projects or working processes have one static image or outcome as a result of the trajectory. The dynamics can not be fetched in or reflected appropriate by a few text lines of descriptive text and an image, since none of these projects are static by 'nature'. Instead of using traditional resources to reflect those essential aspects within the students working processes and projects, a system where the emphasis is more on the structuring and meaning of information and the reflection of choices is more appropriate to use than a traditional tool where the emphasis lays more on aesthetics, choices of the graphic designer and his or her taste.

In my concept for the design of the graduation catalogue - showing processes over time - there is not one graduation catalogue. Every catalogue is showing a different piece of that time span, containing various layers of different information, student or course related. The algorithms are there to assemble these layers and select the information and produce a single graduation catalogue, covering a specific time span. All the catalogues together (produced over the three days of the exhibition), form the actual graduation catalogue as a whole; which of course will never be one object, but distributed over a lot of different persons, visitors of the final show at WORM. In my conception there should not be a single object, that makes the generative algorithms necessary to create variations of an object (the catalogue). The algorithm does not only represents the behaviour of the student during the working progress, but also the principles of the designer of the catalogue. So it is partly a conceptual consideration to use algorithms to generate (assemble) the catalogues.

These algorithms function on different levels. On the level of the catalogue as a whole, since it is in itself a representation of a process in time (the working processes of all students combined). There are three cycles of production (each lasts exactly one day of the exhibition), covering each another time span of the working processes (I do not want to show the end-result only) of the students. Boldly formulated: on day one materials delivered in the period of March are printed, on day two... et cetera. So that is the overall cycle of production - based on time, compressed to the duration of the exhibition and distributed over the three days - then there is an algorithm on the level of each student, which reflects the behaviour during the work process or a mechanisms (not a general 'theme' or concept) in the students project. Not showing the mechanisms through a descriptive static text or image (only), but through the

process of the creation of the catalogue itself using the projects mechanisms to define the aesthetic values of the graphic design.

From the context and background, the ideas and the concept description, it is clear that there is not one single decisive reason in specific to use algorithms within the design process, it is a combination of reasons, logic and thoughts. Main issue is that I want to show a (working-) process over time, in time, showing the process that is 'normally' hidden by the end-result. A working process implicitly means that activities are spread over a period of time. In case of this project that means that 6 months of developments have to be compressed. Compressed to the available space (physically: what is the available space on paper in the printed graduation catalogue) and compressed to the amount of time that is available during the exhibition (presumably three days) to show the time-span. The next step is to distribute the material over space and time, after it has been decompressed. During the distribution of the material it is treated in a certain way, according to predefined rules. Normally this process would be closed and invisible, the rules would be part of a set of actions in my head, during the design work. Now those are transferred to the machine, leaving enough space in the form of variables to incorporate the ideas of "shared responsibility" (referring back to chapter [2] "Ideas, motivations and background").

For all these procedures it is also a technical necessity to use algorithms in the form of scripts to perform those operations.

[8] Practical example

The next paragraph is a description of a hypothetical project and the sketched working processes are freely based on some preliminary, informal conversations with several students. General, abstract themes of projects are hard to translate into a particular graphic design algorithm. What I will look for are specifics of a working process and mechanisms in the projects, here some explanations.

Two extreme examples here represent perfectly the differences in the working processes of students, of how they approach formalities, dealing with feedback settings and their own position in that whole process. For instance some students do have a quite chaotic, and for outsiders a particular uncoordinated way of working. Hopefully there is a systematic in the approach, perhaps there is not. Others are quite organised, systematic, are used to plan and to think far ahead. Do not get scared by formal committee meetings, or by the idea that after getting through the conceptual struggle, there is another technological bump to take. Some students are over organised, use digital online agendas to plan every step carefully. Clinging on to that, like if that is assuring them everything will be fine. Others know all and glide through the process, being so sure about what they are about to do the upcoming months, that they already build a feedback period inside their working process. Some have the nerves to throw everything overboard and do a hard reboot just prior to an important moment short before the end of the project. Others need a red light to have the final push in the right direction. There are students concentrating so hard on techno-issues, that he or she is almost losing sight or the overview of the whole project. Some create noise - not literally, but by not being too articulated during the process - hiding every progress during the project, surprising others at the end by turning up with something unexpected. Some people just seem to use their limited and precious time ineffectively, till suddenly they have an almost physical noxious feeling of the fast approaching deadline.

Those aspects can be abstracted (translated into behaviour) and used to form a part of the algorithmic framework for the graduation catalogue. The use of time and the way of dealing with time are components that will be a part of the scripts which will select and distribute (over the three exhibition days) content in time and space, treat the content in a reflective manner, as a part of the process-pages for the graduation catalogue.

The other aspect is project-related, which aspects within the students work could form a part of the graphic design algorithm. The development of the catalogue does not necessarily have to be a constant process as a whole. Suddenly glitches may appear or references to a specific project of one of the graduate students may take the overhand and influence not only the specific student-project related page, but the entire catalogue, for one cycle (during the three days) only. Example: if one of the students projects would for instance deal with a specific community site, slowly but surely visual and behavioural aspects related to that project can trickle in the catalogue as a whole or changing - intruding - the personal student pages of others (letting them act as a part of the project in specific). To disappear a few cycles later again. Another practical example of a project that could be translated into a graphic design algorithm, is for instance a project that contains theme-related transformations over time in itself. While trying not to give a cold reflection of the facts and information but providing a more personal perspective to specific social situations. Both the transformation aspect, as well as the personal perspective are two starting points that can be useful. Not in the direct sense of creating visual references, or do similar things. References can be more vague in the sense that for instance only transformation methods or mechanics can be adopted, adapted and applied. The perspective of the catalogue can change from formal to personal, from a presentation booklet to a more information analyses set-up, comparing works and emphasising related aspects of projects. If there is for instance an imaginable project about reality and fiction in relation to the virtual identity of two persons, the booklet could form the basis of an interplay between these fictional characters. The catalogue transforms more into a dialogue or a stage, where all the other elements (student works) are just part of the setting, used by the fictional characters and where they "live" in between. Settings could change overtime, the use of language could be adjusted to the methods used in virtual dialogues and in a few "production-cycles" the whole catalogue can transform back to "normal" or use another (graphic) design algorithm to change again.

Which of these aspects (student-process or catalogue-project related algorithms) will have more influence on the final output is something that has yet to be determined and will probably vary from time to time.

[9] Printing and exhibition

As I described for a graphic designer the trajectory of development - the process - ends practically when a PDF-document is sent to the printshop. It is not a part of the design process, it is the result of it. That is at least the traditional conception. Since the printing of the graduation catalogue is part of the 'visible process' and is located at the exhibition - being done on demand - this production process should be part of the design of the catalogue as a whole. Therefor the traditional approach of sending the data - without further concerns - away to the experts of the printshop, is not the appropriate one here. Of course besides the conceptual considerations, technical and economical feasibility are important factors of influence here.

Practically speaking, the printing process can be divided into separate feeding shifts. As a part of the so called "Plan B", what if something goes wrong and what is the backup plan for not ending up with a bunch of white papers (see more on that in chapter [10] "Project management"), the print production line can be separated into a basic-layer and a more elaborated contextual layer. In practice that would mean that the factor of time is a more crucial part of the production process. For those visitors of the exhibition that just want to receive some descriptive information about the projects, students and the course in general, only have to feed get the printed papers and staple them, binding it into a graduation catalogue. For those who are more interested in projects in general or work in specific do have the ability to 'participate' and can feed the papers multiple times (adding more layers to it, of course guided by instructions), before binding those into a more articulated and extensive graduation catalogue. Dividing the printing process into several shifts has - besides the practical and technical aspects - also a another side: the printing procedure reflects the internal (generative) creation process of the catalogue (which is produced in the same way: an invisible process of production and then spit something out and repeat that over and over again) itself. Printing process becomes a production line, vaguely referring in its sequence of actions as an analogue process to the working principles of the generative algorithms.

Not only conceptual consideration play a role in determining the specifics for the printing technology. It is a question whether it is possible in economical terms to rent a printer, to get a printer through sponsorship from for instance Adobe Systems or Canon, or to lend a printer from the ICT-department of the Willem de Kooning Academy or the Hogeschool Rotterdam.

A practical approach which best reflects the nature of the project is probably to use low end simple and relative cheap equipment such as a combination of black and white laserprint technology for text production (on A4-size) and for the printing of images, inkjet printing technologies can be applied as part of the production process. The design of the graduation catalogue does not need necessarily expensive printing technologies, simple and effective techniques in combination with preprinted instructions on A4-paper are sufficient. As is described above, the print process takes place on various printers, which on itself can be problematic in terms of feeding those machines with paper and instruct visitors how to use those various machines. To steer and streamline the print production line and to provide a clear order of use and reason to follow that order, not only the use of instructions can be a considered as a solution, using different printers, paper-sizes and colours can have - besides a conceptual context - also a practical reason.

Added to the two printing-modes (quick and standard), an additional filtering system will be implemented. That filtering system is based on a simple dialogue interaction between computer and user (visitor). Through specific questions (one or maybe two) the printed catalogue will be even more personalised. Those questions relate to the content, but do not refer to a project in specific, but for those who visited the exhibition the relation between the work, the question and the printed material will be obvious.

About the necessity of material resources. Perhaps there is an option to lend a printer from the PZI for the purpose of printing during the test and prototype period. On the other hand, I am able to arrange myself printers (laser and inkjet) for the exhibition of the final show. The only issue during the exhibition is how to secure those machines, from not being taken away from the location. Since printing is an important part of the project and process (it is finally the result of the process), the printers should also be a central part of the exhibition, during the final show. For the exhibition, space should be reserved for one single laptop-computer (preferably not in sight of the visitors) and two displays connected to that machine (see the chapter [5] "Practical implementation" for the details). For the output part of the project, there should also be space available. The use of multiple printers (from which the size differs)

requires probably a table, where those machines can be placed in a kind of production line. At the beginning of that line the displays (with room for a mouse and a keyboard) are located (can be on a separate 'base', block or whatever material is available). At the end of the line the stapler and guillotine are located, to cut and bind the graduation catalogues. Beneath the table the reserve stock of paper can be stored. Around the printers enough room should be available to place (paste) instructions on the use of the machines.

[10] Project management

An overview of resources, materials, implementation, prototyping, testing and conceptual developments divided in steps, placed in a fairly rough time line. My intentions are to use this schedule as a guideline during the project, a tool to measure the progress. Probably it is necessary to adjust it from time to time, although I tried to be as realistic as possible in my inventory and planning here. The prototypes produced during the process are the points of reference for checking up on progress. Although prototyping often during a process, demands more work, for me such a rigid structure is necessary to keep the overview.

As far as I can oversee right now, this design process (project as a whole) contains a diverse set of 'problems' (challenges) which evidently have to be solved over time. I consider it not as too complicated to overcome - although in the 'generative' part there are a few problematic aspects - and there should be no fear for ending up with empty, white A4-papers as being the graduation catalogue. There is not a fully articulated backup plan, but since the prototype is already capable of printing generated pages - with texts and images - I consider that as a sufficient efficient backup system (for never ending up with empty paper).

December 2006

- initial prototype v1 finished

January 2007

- developing final work plan
- determine usefulness of prototype parts
- designing (sketch phase) catalogue / conceptual fine tuning
- making conceptual decisions which influence material resources

February

- determine role of course direction in editorial layer
- conceptual decisions regarding shape (form, size) catalogue
- determine what output / print options are necessary (final decision)
- script testing comparing bash and Python (skill-improving)
- transform conversations into processes and possible compositions
- gather content for editorial layer
(determine exact subject of essay)

March

- improving Python skills through trial and error
- inventorying circle of "getting to know" conversations with fellow students
- developing generative scripts
- solve issues print file merging
- rapid (second) prototype v2 of system in general
- gather content for editorial layer

April

- continue developing generative scripts
- dummy interface script testing with second test display
- possibly first print tests
- gather content for editorial layer
- second circle of "proposal feedback" conversations with fellow students
- develop final interface for online archive (HTML/CSS) to make it presentable
- finished prototype v2 for "Open Dag" at WdKA
(essay writing)

May

- continue developing generative scripts
- restructure main project infrastructure (* see technical description)
- final prototyping v3 in possible dummy exhibition setup
- receive final project descriptions from second year students
- receive project images from second year students
- final circle of "wrap-up" conversations with fellow students
- hand in essay on May the 15th
(essay writing)

June

- preparations for final show mid-June
- installation of the final show June 15th-19th
- possible room for last minute problem solving between the 19th and the 30th
- opening of the exhibition on July the 7th at WORM