You Get as Much as You Generate

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This year we celebrate the tenth anniversary of the 'Generative Art Conference' – congratulations and many returns of this occasion.

It is on days like these that one remembers, or even contemplates, one's own endeavours and, in some respects, achievements in the field of generative design. What came to my mind were two projects which I would like to present here, one from generative design in the proper sense, the other from generative storytelling.

What both these projects have in common is the interaction of several computer programs; however, this does not mean that the focus is on demonstrating the technological possibilities, rather it is on examining the aesthetics of form and content.

A major interest of all our research projects in generative design is to find out about the basic conditions of automatic generation avoiding randomness. These conditions will probably vary depending on the type of application and would have to be formulated accordingly. With these brief considerations in mind, I will now take a closer look at the two projects.

My first example is a rather experimental concept of applied transformation –

A Generative Corporate Design "Motion I Change" (2002)

In order to give you an idea of the requirements the corporate design was supposed to meet, let me briefly describe the institution for which it was developed.
The Institute for Media Design is a research institution of the Mainz University of Applied Sciences. As such it aims to meet the academic demands of experimental research as much as the economic requirements of profitability of its partners and customers from the economy and from the public sphere. What was expected was a visualization uniting and expressing both these dimensions thus allowing the Institute a comprehensive representation of its aims and fields.

The media to which the corporate design should be added were paper sheets, calling card, internet presentation, presentation film, newsletter 'update', brochures, notes, labels, rubber stamps, texts.

The very core competence of the Institute – developing and designing images in motion – led directly to the keywords of the concept: Motion I Change.
This claim does not only include a reference to the actual demands of working with images in motion, and to the fact of having to face the never ending technological changes and revisions caused by innovation and development, but it also includes the Institute itself. The peculiar conditions of a research institute are characterized by the two keywords as well – an institute is involved in continuous processes; it is subject to dependencies, concerning finance, personnel, sometimes even politics, all of which keep it going, and moving on.

All of this had to be thematized and visualized – the task was to create a design of utmost variation which still had the quality of being recognized, whose complexity and multi-

layeredness could still be conceived as a whole, as one, while it also represents, in form as much as in content, the Institute of Media Design.

All of these aspects went into the resulting corporate design:
Motion I Change.

At the centre of the image is the sign. With the former logo of the Institute as a starting point, a three-dimensional object was created continuously regenerating itself in form, size and colour according to mathematically defined parameters.

The former square shaped logo became a three-dimensional cube with six slice-like layers. Each layer displayed a sequence of colour variations to be found in the former logo, meaning that in the starting phase the new sign relied on the traditional logo.

The individual layers are flexible within the whole set and can be controlled, a prerequisite for the beginning metamorphosis. Once the image has started, an algebraic program continuously calculates and directs the further development of the individual layers, resulting in an ever developing form with unpredictable design variations.

By way of an 'automatic chain of utilization' the current shape of the generated sign is transferred to all the media involved. The starting point here is the three-dimensional program 'Maya' which develops and transforms the sign and regenerates it according to algebraic parameters. All generated phases and stages are then processed in the 'photoshop' and saved in the internal network server. By way of programmed processing (macro) the sign in its present shape, size and colour is then made into a 'Word' file and is placed on the media. Thus every single use of the sign will produce a unique realization, an original.

As all media coming into use allow for the possibility to place the sign at the centre of, say, a sheet, using fuzzy logic, the colour design was given special attention. In a series of experiments a closed circuit of colours derived from the three basic colours red-yellow-blue was created. Colour choice can be random as well as following the chronology of a given sequence. A 25 percent brightening of colours produced a second circuit which was primarily used for combinations of the sign with texts.

Being the major characteristic of the design and representing algebraic randomness, the sign had to be counterbalanced by the design characteristics of the remaining elements – they were very tightly and minimalistically ordered. The sign is accompanied by a massive grey bar, the font chosen is bold, the segmentation of the surface constructivist. All of this is meant to emphasize the principle of chance as deliberately made central for the design, and also concentration on the many options of associating the sign is supported.

One further characteristic of the corporate design should be mentioned – its random selection of sign and text position on the format. This characteristic is particularly important for the print media, as here the unique and in this sense 'original' positioning of both sign and text contributes, along with changeable forms and colours, to illustrate process and change.

The corporate design I have presented here is used this day and has been supplemented by various additions.

A self-generating Movie "Posing at Three Thirty" (2005)

The following project is a generative film which represents a completely different area and handling of generative art. Free abstract association is now enlarged and supplemented by storytelling.

"Posing at three thirty" did not invent the category of the generative film. Rather, it rests on the experience made with projects like "Waxweb" (1994) by David Blair or "Grammatron" (1997) by Mark Amerika. It differs significantly from these works in that no parts of the storyline were pre-arranged. The underlying working assumption is that by stringing together simple actions (a door opens, a glass is raised, a train passes, an actor poses a question etc.) simple stories can be told. Since there are neither pre-arranged nor pre-selected acts there is no viewer interaction.

As a precondition for this project, it was necessary to systematize aesthetic parameters of cinematic storytelling so as to ensure that a computer program can generate the entire film.

"Posing at three thirty" is a self-generating film on the internet. There is no screenplay. There is no beginning and no ending. Instead, there is a multitude of opportunities for developing and dramatising stories.

The film is generated by way of an input from a database of almost 12,000 small film sequences (approximately 30 hours of material). These sequences are very short: each sequence is composed of only one take, for example "the Old Lady enters the bar-room" or "the Anarchist meets another character".

The film is generated by several generators that have been networked.
These generators not only develop the story line but they also make basic aesthetic decisions. For example, whenever the camera is used in a shot–countershot setting or in an overshoulder take the scene is dramaturgically charged using background music or the atmospheric sound of the room is the only thing you will hear..

The basic story line is created by the main generator which decides whether or not two characters meet in a set place. If the characters meet, the generator also decides whether or not the characters will engage in a conversation. Where this is the case, the dialogue generator takes over. The dialogue generator decides how long the conversation will last and what is being said. Picture and sound tracks run simultaneously yet independently of each other, so that the generator can also decide on the appropriate camera take. In addition, it decides whether or not additional film sequences are to be included in the conversation setting (like a third character enters the room). The dialogue generator informs the sound generator when spoken text is used, so that background music can be regulated accordingly where applicable. Once the conversation is over, the main generator takes over again; the latter then decides whether a singular action, a mood etc. should follow and 'hands over' to the relevant generator.

In all the following generators are applied:
main generator
dialogue generator
sound generator
action generator
mood generator
camera generator

The central story line takes place in a hotel in which a total of 12 persons are present. Two of these (the Barmaid and the Singing Lady) are given special functions. All persons have individual characters. Their interests focus on certain themes, and they have been named accordingly.
The Old Lady

The Anarchist
The Aesthete
The Deliberate
The Baroque
The Cocoonist
The Cultural Old Dear
The Moralist
Mr No Doubt
Miss Destiny/Chance

Special Characters:
The Singing Lady
The Barmaid

All of these individuals pursue their occupations in the hotel where they do, or do not, meet and interact. Their personal profiles permit interaction and confrontations; however, these are not necessarily actualized. Never does one know what is going to happen, and you surrender yourself to the self-generating film. Predictions as to what will happen are virtually impossible, as there is an algebraic multitude of possible dramaturgical turns.

Main attention during the making of this generative film was given to the production of sequences that were as universally usable as possible. Instead of the usual smooth story connections log-in spots were prepared through which the actors could interact with each other. Characters do not evolve together, rather they circle individually around sets of topics. Storylike events emerge merely from the random combinatoric options of the software.

As the main generator decides on length of a scene as well as on the selected camera position, only one definite orientation was chosen for the actors: they all speak head-on to the camera. At this point the quality of the work of the actors has to be credited, as they did not know the context in which they were supposed to act, nor the final results.

Defining precisely which creative decisions the individual generators should make, turned out to be the biggest challenge of this project. Finding the right mixture of maximum freedom of choice for the algorithm and minimal framing by the author was essential for the project. The right balance here allows for markedly surprising (even for the author) twists and combinations without transgessing an aesthetic frame.

The result may surprise in different ways: as being downright incoherent, or as pointed and bold. Expectations of a conventional movie experience will be frustrated as there is no continuous plot. However, anyone enjoying cinematic images arranged in a rather musical sense can, for a while, be well engaged in this generated and generative film.

Critical Questions

Quite naturally critics after having been confronted with this film, have had their doubts about this experiment and have asked questions such as 'does it make sense?' and 'what is this supposed to mean?' These legitimate questions are grounded on the assumption that there are known and feasible patterns of how films function. Audience expectations as to what makes a good film have not been irritated by even the most ambitious high-tech projects of the past; this phenomenon can be observed in literature as much as in film.

Now this observation should be given some weight and it should not be too easily dismissed as being 'hostile to progress'. Even if one does not share this attitude one would have to admit that obviously to emotionally involve considerable audiences has so far not been achieved.

Mind you – I am not here craving for the applause of big audiences, all I am saying is that so far little 'identification by emotional involvement' has been reached – and it is this emotionality which is most important. Only if there is an emotional radiance there can be hope for a new mode of expression. So far, it is only a field of research.

Yet it is of utmost importance for us as researchers to see how differently the projects of generative design are received. The documentation of the two projects reveals that the corporate design Motion I Change has not been criticized for its generative mode of creation, rather it is measured by the usual standards of design and is approved even by traditional observers. Against that, the project in film 'Posing at Three Thirty' requires much more explanation and discussion.

A first hint as to the different reception and evaluation of the two projects can be found in their differing degrees of abstraction which the observer has to face. The corporate design is a purely formal item. Existing variations are accepted as means of a formal aesthetics, even if an extremely odd positioning of the sign on the media has been selected by the computer program. The questions about the meaningfulness of such procedures were considered irrelevant, even in the starting phase.
Quite different the generative film.
The overwhelming question of sense-making emerges even after those happy moments when the generators have produced sequences of five or seven minutes length with seemingly coherent dialogue and camera takes; here content dominates formal abstraction.

Our early hopes of being able to produce for the audience an experience of 'film formality' like one would get in watching music videos or in VJ-ing, were obviously frustrated. Maybe the very mention of the concept of 'film' already gave rise to false expectation. In addition, it seems to us to be essential in projects to come to render the technological processes of generating the sequences understandable. For it has been repeatedly observed that by detailed presentations the pleasures of reception are increased. In order to give the internet visitors highly authentic impressions we abstained from any didacticism on the website 'three-thirty.com'. As soon as you have opened the site the film is loaded and begins to stream without further ado. We shall continue with this method of direct confrontation in the future, even if for this project a little detour including some extra information might have been helpfull.

We consider all of these critical reflections to be contributions to our future projects in interactive TV and film, the more so as the present realisations or just announcements of industrial products are restricted to transfer, usage and distribution of contents, and less on generating them. But it is this challenge that the creative designer should be facing.
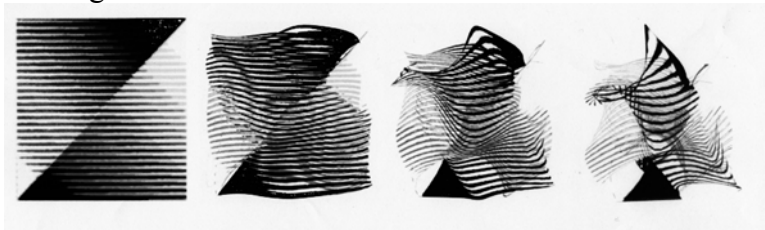
Our project has been a first step. We are certain that our method of bringing together a large amount of gradable and scalable material is promising. We are also certain that action in this medium must result not from preconceived structures but must emerge intrinsically. This action does not have to be dramaturgically structured, it can also be developed following aspects of form. Only it has to address the observer's emotions for identification.

Further experiments and more research will be following. Investigating the basic conditions of deliberate design is the most urgent challenge in the realm of generative art. Automation of design processes can only be applied successfully if the author provides sufficient framing to adequately implement intended creative goals. This may involve smaller or larger degrees of freedom or constraints in the use of parameters. The crucial part, however, is always a deliberate definition of those basic conditions that influence generation.
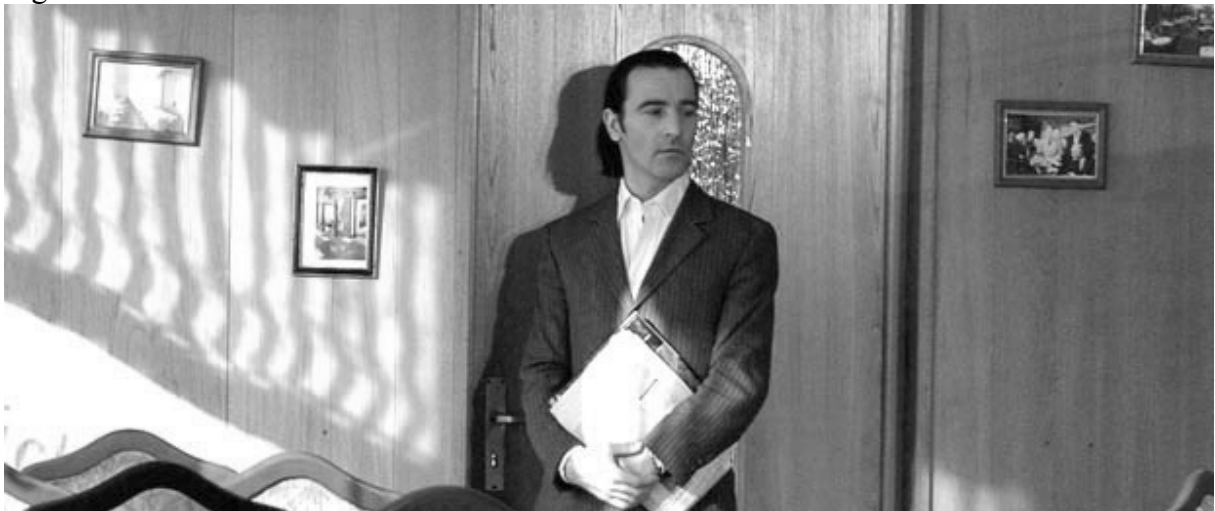You Get as Much as You Generate.

The Sign

Sign Evolution

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