

## GenderBlending

The non-profit association and arts-lab Constant vzw, together with the cultural centre De Beursschouwburg, artist, filmmaker and co-founder of the magazine Scum Grrrls Anne Smolar and queer arts, sport activist and co-founder of the Multimedia Institute/net.culture club MaMa in Zagreb (Croatia) Željko Blaće, called out to “body hackers, 3D theorists, game activists, queer designers and software feminists to experiment at the contact zones of gender and technology”<sup>1</sup>. As a result, from 17-22 November 2014 a group of approximately 25 people came together in the halls of Beursschouwburg in Brussels (Belgium) to take part in a series of work sessions, workshops and discussion groups. The three main technologies that were examined and utilized were 3D printing, where the “digital gets physical”, 3D scanning, to “trac[e] the limits of bodies”, and 3D modeling as the “parametric imaginations of gender”.

The call for participation was kept open to give possibilities for a wide range of interests. The group of participants was quite diverse: from artists who have done some projects with 3D modeling, to feminist activists who have a sincere interest in gender and technology, to 3D modelers who have not been really touched by the topic of Gender(Blending) but keep their minds open to new aspects and perspectives. This diversity of backgrounds and interests made it possible to have a rich exchange of ideas and different approaches.

In order to include the public, to create a local perspective, to present and discuss the topics and results of the work sessions, GenderBlending also included other events that look at gender in different social contexts. Before the work sessions, Canadian editor, designer and researcher Ginger Coons offered *Gender Turing Tests*, a public workshop in which the participants discovered the possibilities and limitations of concealing and identifying gender online when the people communicating with each other are divorced from each others bodies. Throughout the workshop, one group worked on strategies on how to best conceal one's gender while others developed measures on how to identify the other person's gender in, for example, a chatroom. This workshop was realized in cooperation with Pink Screens – a film festival in Brussels, organized by Genres d'à côté, that promotes alternative sexuality and gender – and served as a warm up. It built the context for the work sessions by starting discussions concerning gender stereotypes and perceptions of gender.

Additionally, an evening prior to the work sessions about de-normalizing and gendering sports, Željko Blaće hosted kick%sync%trans, where Blaće and Lola Lasurt, a visual artist and creator of the project *The Match: Married women against single ones*<sup>2</sup>, gave an introduction to the topic followed by a screening of Tom Weller's and Ruben Malchow's short film *Fest der Liebe*. The project kick%sync%trans also included a modified kickertable which raises the question of norms in sports and reflects on issues of representation.

Part of the program was also the opening of a Public Archive<sup>3</sup> designed to inspire and provoke debates. The Public Archive contains a collection of games, videos, documents and images and also serves as a reference library. At the end of the work sessions, there was a public presentation of the results obtained from all the sessions and a discussion concerning how the results relate to the collections displayed in the Public Archive.

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1 [genderblending.constantvzw.org](http://genderblending.constantvzw.org)

2 [https://www.youtube.com/watch?v=C\\_VjDPxptGE](https://www.youtube.com/watch?v=C_VjDPxptGE)

3 <http://genderblending.hotglue.me/publicarchive>



*Public Archive at  
GenderBlending*

## **Free Software: Opening Up Spaces?**

In discussing gender and technology it becomes evident that mainly F/LOSS (free/libre/open source software) should be used as open source software aims to offer the freedom to its users to run, copy, change, challenge and interact in a communal setting. The program of GenderBlending shows that “especially when it comes to matter of the body, we would like to focus on tools that invite us to speak back to their social and technological construction”.

Seeing F/LOSS as a space for interaction and discussion, for possibilities of changing and challenging, the idea for GenderBlending started when Constant member, co-founder of Open Source Publishing<sup>4</sup> and feminist geek Femke Snelting wrote about Gendering F/LOSS and, more precisely, about Girls and Cars in the modeling world of Blender and other open graphics programs<sup>5</sup>. Her analysis and criticism, looking at the process, the reactions and the debate amongst blenderartists.org members, showed that in production and development there is a male dominated perspective. Examples of the results of this perspective can be seen in female characters, such as Blenderella, Vampirella and Sintel who seem to emerge more from a (male) fantasy of women with big boobs, slim waist and 'beautiful' features with characteristics of an Amazonian warrior rather than a realistic portrait of a strong and fearless woman. Snelting's claims for “a more ambitious approach [which] would be to ask for images that experiment with diverse realities, bending the rules of both gender and software”<sup>6</sup> were the grounds to open GenderBlending as a space to analyze, deconstruct and play with a variety of digital tools, 3D printers and 3D scanners, combined with other art forms and performances.

Even though the levels of experience in working with F/LOSS were quite different amongst the group of participants there was the common agreement that in terms of accessibility, communal exchange and collaborative practice, using free and open software rather than proprietary programs was the way forward. As Blender puts it:

*As a community-driven project under the GNU General Public License (GPL), the public is empowered to make small and large changes to the code base, which leads to new features, responsive bug fixes, and better usability.*<sup>7</sup>

And yet, working with F/LOSS and trying to enter the community and the coded world, one realizes that with all its freedoms, free software also demonstrates limitations and obstacles. The question of underrepresentation of women or male domination in F/LOSS development is not new. In fact, some studies show that the participation of women in F/LOSS is lower than in the proprietary field.<sup>8</sup> Even though the reasons for this are debatable, one argument could be that instead of actually opening up spaces, free and open software developers, as well as active users, are aiming for efficiency and an on-going improvement ultimately matching the same goals as proprietary software. So even though the creative and production process is more collaborative, communal

4 <http://osp.constantvzw.org/about>

5 <http://snelting.domainepublic.net/modelling/girlsandcars.pdf>

6 <http://snelting.domainepublic.net/modelling/girlsandcars.pdf>

7 <http://www.blender.org/about/>

8 see for example Dawn Nafus: 'Patches don't have gender': What is not open in open source software, 2011: <http://nms.sagepub.com/content/14/4/669.full.pdf>

and democratic, and the product is affordable to everyone, the end result remains the same. This argument also leads up to a wider level: talking about GenderBlending, about gender and technology, the underrepresentation of women is certainly not the only issue nor can it be seen as the main issue.

At this event and the workshops, one of the main objectives was to draw the attention towards the perception of gender along with other criteria and how they are portrayed and carried on in technology. A closer look at digital tools, how they are made and how they are used reveals that socially constructed norms, notions of human beings and their composition are reproduced. Therefore, it is not enough to look at the 'outcome' of software, but at its construction itself. Within its 'nature', software depends on norms or parameters, which define the range of variation. But because of its intrinsic binary character, the possibilities are limited within (normatively defined) boundaries and the 'endlessness' of variations is an illusion. It is important to recognize that software, or rather its code, is interrelated to societal norms and therefore is gendered. Opening up to broader, more inclusive understandings and perspectives of gender implies to break out of the parametric system – the topology – and to destabilize it.

### **Transitions in and between programs**

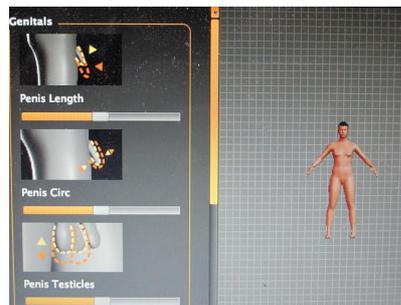
With this in mind, the work session at GenderBlending aimed to explore the possibilities, the technicalities, and the set-ups of different programs, such as MakeHuman, Blender, Kinect and libfreenect for 3D scanning, meshlab etc.

As it provides tools to create human figures, to model and modify them in a fairly easy way, the 3D modeling program MakeHuman was of particular interest. On Wikipedia, it is described as followed:

*“MakeHuman is developed using 3D morphing technology. Starting from a standard (unique) androgynous human base mesh, it can be transformed into a great variety of characters (male and female), mixing them with linear interpolation. [...] For example, given the four main morphing targets (baby, teen, young, old) it is possible to obtain all the intermediate shapes. Using this technology, with a large database of morphing targets, it's virtually possible to reproduce any character.”*

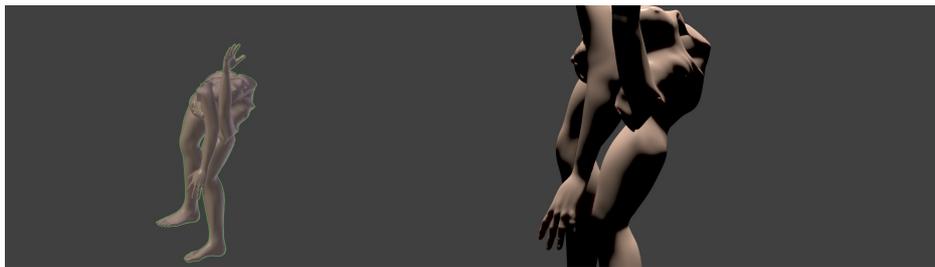
Not only the outside construction of bodies but also their relation to space through the simulation of muscular movements were the focal point. At first view the settings of the program MakeHuman offer a variety of choices and there seems to be fluidity. However, the options are maintained within a binary system (more or less female, more or less asian etc.). As architect, programmer and participant at GenderBlending Phil Langley put it in his introduction: “the 'SPACE OF POSSIBILITY' certainly doesn't feel very large and whilst I can, again, 'flex' the model (and the muscles....), I still cannot escape the boundaries and limits of digital control provided by the GUI sliders...”

The binary system of MakeHuman consequently presupposes a binary approach to gender. Therefore part of the discussion and experimental scripting involved rethinking the parametric interface of MakeHuman: where do we see the potential? how to redo it? and, where does that take us? Additionally, it was quite revealing to see that the only options to be modeled in the 'gender' category are *breasts* and *genitals*, with *genitals* consisting only of penises and testicles. Even though there are two options for vaginas in *material* they cannot be modeled, neither in size nor shape. However, responding to that by just creating such an option within the category for MakeHuman (model size and shape of clitoris, labia etc.) would not be resolving the issue of limitation within the interface itself.



*MakeHuman: Category 'Genitals'*

Another important focus was looking at the transitions between the programs, when it is not only the outside or surface but the armature or the skeleton of a body as a determining factor. Motion capture files are used to animate an imported MakeHuman file in Blender. Luckily, importing a *male* motion capture file in MakeWalk failed on the armature that was developed in one of the work sessions (this error seems to occur relatively often<sup>9</sup>). However, since there is that division in female and male motion capture files, and there was a high level of curiosity on how those would differ from each other, the next step was to look at how the files are written and constructed. The result was to blend two different files (female and male) by writing them together in a texteditor and load that in Blender as a motion file. 'Destabilizing' the file led to a combined movement in which the *male* motion was now visible, even though showing the two motions to several people did not provide a unanimous decision on which movement represented which gender. In the case of a *male* crouch, the motion resulted in a movement that was most likely not intended but gave us the opportunity to explore the beauty and possibilities of imperfections. The movement resulted in a 'distorted' body.

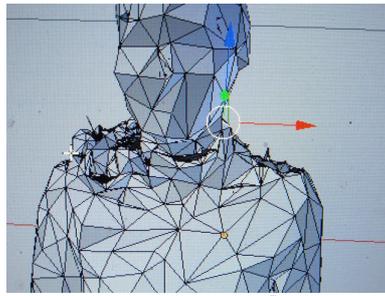


*Male Crouch Motion in MakeWalk after blending two motion capture files*

In some cases, the difference of the movements between female and male were so marginal that they were hardly noticeable. The fact that people had different analyses of the movements proved that they are based on social constructions that can vary depending on social background, cultural heritage or simply individual experiences. Therefore the division of the motion capture files are questionable but also reveal certain perceptions. To put these analyses and theories into practice it was important to go further and print the 'mashed up' body as a physical process. Surprisingly, despite the mess-up of outside and inside through the intersection of faces, the 3D print turned out 'perfect' in its own construction.

When working with 3D scanners and (primarily free) software, we faced gaps in the mesh which would make it impossible to print hence the incompleteness. The software will complain or fix the gaps (e.g. Meshlab) because of a 'bad' or incomplete topology. Instead of filling the gaps or fixing the mistakes following the normative path of the algorithm, the suggestion was to 'think outside the box', to see that as the entrance to a *rabbit hole*. For instance, to open up the space to human/non-human constellations or new algorithms.

<sup>9</sup> [http://www.makehuman.org/doc/node/makewalk\\_errors\\_and\\_corrective\\_actions.html](http://www.makehuman.org/doc/node/makewalk_errors_and_corrective_actions.html)



3D Scan: 'Incomplete'  
Mesh

Within this work session it was also important to reflect on the possibilities of 3D scanning and where we encounter it in every-day life, such as medical examinations, airports and surveillance. 3D scanning software is mainly proprietary to fulfill the demand on the market. This implies that 3D scanning will soon be available on a broad scale to everyone. Being exposed to having our bodies scanned in detail not only raises the question of property rights of the images/information and privacy rights but also the perceptions of our bodies. Digibodies, as characters that are made of bits that consist of a collection of data, create identities or replicas of the people providing the data. There are different kinds of data sets, such as body scans, fitness tracker, medical x-rays etc. The Perfect Digibody also includes one's interaction with scanning, tracking and databases. Queering could and should be a response to this trend and to question the normalization process. Understanding what and why certain information is used and what they say about our identities provides the starting point to de-normalization.

### De-normalizing

As part of the project Kick%Sync%Trans, Željko Blaće presented the prototype of a *Football for Everyone - Diversity Kickertable*<sup>10</sup> which was developed in Ghent (Belgium) in cooperation with Timelab and a group of contributors. The objective of the project is to de-normalize/gender sports through changing the kickertable itself and its players. The game offers a spot for social *and* political intervention. The project not only aims at critiquing and challenging the representation of gender, ethnicity, age, physical capacity and the invisibility of certain groups within sports (homeless people, sans papiers, couch potatoes...) but also aims to touch and change the topology of the game. The kickertable was a reference and discussion point throughout the week of GenderBlending as it offered the possibility to transfer concrete ideas into practice. For example, the idea was raised to create a player that would catch the ball rather than only kicking it. One of the printed results were hands in different shapes to replace the handles of the poles. This changes the feel of, and our interaction with, the game and how it is played. Moreover, the altered kickertable presents diverse players who receive and pass the ball in different ways.



*Football for Everyone -  
Kickertable from Ghent*

In practice, creating diverse players seems to be a fairly easy task but as we were trying to go deeper and use this idea of changing topology, the debate also lead to a discussion about bodies: Can we change the topology of a human body and its movements? If so, where can this change take place? Outside the digital space Laurence Skivee, a Belgian artist who, in her work explores the construction of human bodies and how they can be deconstructed and reconstructed, offered a

<sup>10</sup> [https://www.facebook.com/Football.for.Everyone.Kickertables?ref=tn\\_tnmn](https://www.facebook.com/Football.for.Everyone.Kickertables?ref=tn_tnmn)

work session in which cellophane was used to create combined bodies, to blend various movements and reconstruct them in sculptures. A group of people wrapped themselves in cellophane and out of the casings formed figurines that would be combined with others. This workshop inspired discussions concerning the construction of bodies which could then be transferred to the digital sphere.



*Laurence Skivee: Combined Bodies*

During the GenderBlending work sessions, there has constantly been the question of norms and the construction of them. Gendered movements in animation, distorted bodies and binary systems, the materialization of gender and stereotypes in technology. For many participants, it was also important to get in touch with different technologies, to understand their algorithms and parametrics, as they have not had many experiences with digital tools and programs. Rather than only following tutorials on how to use them, in an active discourse it was possible to look behind the logic, to comprehend and question the purpose of different tools but also materialize ideas, to create something that can be experienced in the physical world.

Connecting to the parametric system of (free) software, another topic introduced at GenderBlending was an operating system (OS) that would aim not to be competitive on the market but that would be more directed towards the inclusion of a multitude of identities and be open to queer experiences and positions, effectively getting away from emulating what is already out there in existing OS'. The question was and remains if and how a Queer Operating System (QOS) could act as a counterpart or alternative. Even if the realization of such of an operating system does not seem possible the theoretical elaboration should be seen as an ongoing process and must include inquiries into destabilization and reconstruction. One concrete idea was to break the meritocratic binary by developing a new logic gate for programming language: a 'BUT' gate.

### **Queering the system**

Experiencing, discussing and experimenting with free software and its parameters with a socio-analytic perspective opened up new dimensions and aspects for the participants during the work sessions. The question remains why is it necessary to continue talking about it when the whole idea of F/LOSS is that *everyone* can add to the software, can change it and bring in their own perspectives? The world of software, of computing in general cannot be separated from social norms and social constructions and cannot be free from prejudice and stereotypes. Experiences with different tools and programs, exploring the strengths and weaknesses of free and open software, along with the experiments and outcomes of the work sessions, were presented in the public archive to open up a space for discussions with a wider audience.

The idea of *Queering* software and digital tools is an on-going progress in which GenderBlending as an event is just a starting point. *Queerness* or *Queering* is thereby not limited to the common (and now also commercial) use of the term *queer* as in gay, lesbian, trans etc. but should be understood as a performative act against dominant perceptions and the exclusion of everyone and everything outside the social norm. As a reference point or an orientation tool, a *Cabinet of Queeriosities*<sup>11</sup> was displayed in which social struggles, digital and analog art projects and symbols of political movements were assembled.

The purpose was to widen and open up the already existing debate over gender and technology,

<sup>11</sup> <http://queercabinet.hotglue.me/>

about the perceptions of gender, and the reproduction of norms within the F/LOSS community. Implementing the question of bodies and movement, coupled with how their societal perception can be placed upon digital bodies and algorithms as a set of rules and calculations, means to break into the logic of 'usefulness', efficiency and completion. Moreover, this allows us to see imperfections as opportunities, as open spaces for more perspectives and ultimately for more realities, taking into account, for example, various forms of physical capacities. Therefore, questioning the push for more efficiency, for perfection in the sense of aiming for the best product for the consumers, and the reasoning behind developing certain tools, plays an important part in this.

The discussions and interventions in the work sessions have provided thought-provoking impulses which need to be continuously worked on, re-evaluated and advanced. After all, pushing the essence of F/LOSS, which claims that we are not only consumers but that everyone of us can contribute to the coded world, provides us with the power to step in, intervene and *queer* the system.