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Normality in Videogames and the 'Avalanche of Numbers'

Normality is one of the defining categories of our society. Statistics of all kinds play a crucial part in establishing the normal. Computers, on the other hand, have a very close connection to statistics as the digital world is a statistical one in itself. In a multitude of games statistics are used as an element of gameplay. In this perspective, games can be regarded as a training in self-normalization. However, it is still questionable whether this leads to a genuine production of normality.

In the 19th century western societies were profoundly transformed by what Ian Hacking describes as the "avalanche of numbers." First, various national statistical institutions started compiling and publishing more and more statistics. And then, gradually, the use of statistics spread across society. Today we seem to be living in an omnipresence of statistics surrounded by public opinion polls, online voting, data warehousing, data mining and forecasting. Society has become statistical. – In *The Taming of Chance*, Hacking notes:

> The enthusiasm for numerical data is reflected by the United States census. The first American census [1790, S.B.] asked four questions of each household. The tenth decennial census posed 13,010 questions on various schedules addressed to people, firms, farms, hospitals, churches and so forth. This 3,000-fold increase is striking, but vastly understates the growth of printed numbers: 300,000 would be a better estimate Hacking (2008:2).

Another transformation took place closely related to this "avalanche of numbers." Society has become normal: "The cardinal concept of the psychology of the Enlightenment had been, simply,

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human nature. By the end of the nineteenth century, it was being replaced by something different: normal people" (ibid.:1). Nowadays normality is ubiquitous, so completely self-evident to us, that we usually do not recognize it anymore as a social construct. We have become completely used to being normal. Especially the mass media participate in the production and distribution of normality. Consider the following headlines:

- "That Yawn after Lunch Is Perfectly Normal" (NY Times, 08-19-2007)
- "Financial Markets Calmer, but Still 'Far From Normal', Bernanke Says" (NY Times, 05-14-2008)
- "Virginia Tech Struggles to Return to Normal" (NY Times, 04-24-2007)
- "Unexpected Becomes Normal in Men's and Women's 400" (NY Times, 07-04-2008)
- "'Normal' Levels of Bad Cholesterol May be too High" (USA Today, 02-01-2009)
- "Washington Gets Set to Return to Normal" (Wall Street Journal, 01-21-2009)
- "Is He Normal Down There? Shape, Size, Skin Tone… What's Weird, What's not" (Cosmopolitan, March 2009)

Normality is one of the defining categories of our society. The production of normality has been explored scientifically for various media, including literature, television and movies. But is there normality in video games? To answer this question we will, firstly, look at statistics in video games, and, secondly, at how players relate themselves to these statistics.

Fig. 1: COSMOPOLITAN (March 2009): Is He Normal Down There?, Hearst Magazine

Statistics in Video Games

If you look at any video games, it is rather obvious that there are a lot of statistics in them: Statistics give players feedback on their actions, which helps players control the game. Statistics are displayed at the end of the game, such as high scores or detailed charts that assess the player's performance in the game. And in certain games the basic goal is to manipulate statistics in the right way. These statistics indeed apply mechanisms which are part of the production of normality. One of the ways this process occurs is by reducing different actions to numbers; in this way, qualitative distinctions become points on a quantitative scale, a measurable continuum. For example while playing the game SUPER MARIO BROS. (1985), players are rewarded for performing certain actions with a respective number of points. Deleting a non-player character earns 100 points. Collecting coins earns 200 points. Sliding down the flagpole earns 400 points. The performance and quality of these actions remain considerably different; yet, they are reduced to one number, which is calculated at the end of each level. The resulting number then allows players to compare their performance with each other. This process may seem uncritical with regard to video games. But of course in other fields like medicine or education we would really need to take a closer look, which information gets lost when we reduce different qualities to one number.

Fig. 2: Earning points in Super Mario Bros. (Screenshot)

For instance, in Germany, after twelve years of education, students leave school with a number that represents their final grade. In many cases this number determines whether or not a student may go to university; however, we certainly lose some information when we reduce twelve years worth of experiences to one number. We do not need to consider something so complex when we analyze normality in video games. Nevertheless, the underlying process is the same. Therefore video games are in some respects a training in self-normalization. We have established that computers have an affinity for statistics, that games use statistics in their interfaces, and that these statistics apply normalistic processes. But do these statistics constitute normalcy in video games?

Normality in Video Games

First of all, there is of course more to normalcy than just statistics. Jürgen Link (2006) describes an overall concept of the production of normality in his theory of normalism. He distinguishes normality from normativity: Normativity is a binary distinction. One either acts according to the norm, or not, yes or no. Conversely, with normality it is not longer possible to view the pathological or abnormal as a qualitatively distinct state. Normal and abnormal are only different positions on the same axis and while the limits of norms are rather fixed and clear, the border between normal and abnormal is a vague transition and open to discussion. While normativity is pre-existent to social actions, normality is essentially postexistent to action. A "normal" action is statistically constituted as "average," and therefore normality is established retrospectively after large quantities of individual actions.

Further, normalism considers self-awareness, self-management (Link 2004a), the symbolic visualization of orienteering data (Link 2004c) and the normalistic fun and thrill tape (Link 2004d). And while all these elements of normalism will need further research in regards to video games, statistics are a good starting point, particularly with regard to the special connection between the computer as a data processor and statistics being based on data. The digital world is a statistical one in itself. While data collection in the physical world requires a lot of work and the use of interviews, questionnaires, measurements, etc., data collection in the digital world provides all data almost for free, immanent in the device. As such, it would be easy for games to provide players with all kinds of statistics related to a normality within the game world, but they don't. In most cases, games only record data which is relevant to the goal of the game. Video games, in contrast to other media, offer a new scope for action. You can act within the medium, for example through an avatar, and

actions, large quantaties of individual actions, are the basis for normality. These actions needed to be captured, measured and transformed into statistics to facilitate statements such as "Eighty percent of dwarves in World of Warcraft agree that…". Games allow action, but they do not deliver all of the necessary statistics, which accounts for the lack of a genuine, specific normality inside the digital game world. But while games are not currently interested in the production of normality, players are.

Fig. 3: Statistics at the end of a multiplayer match of STARCRAFT (Screenshot)

So in a final example, we will discuss the statistics offered at the end of a match in the real-time strategy game STARCRAFT (1998). In this case, final statistics might be interesting to the participants of this specific match, but total points do not function as a high score. Players cannot compare each other across different matches because the circumstances of a single match vary too much. Hence, there is

no high score ranking, like in SUPER MARIO BROS. To overcome this obstacle, some STARCRAFT players use BWCHART-software (2006) to evaluate the data recorded by STARCRAFT during the match in different ways. BWCHART shows the distribution of actions, over time or in terms of percentage, the application of hotkeys, the amount of gathered resources, and something called "Actions per Minute" (APM).

Fig. 4: BWCHART – actions per minute (APM) over time (Screenshot)

This APM value is calculated by counting how many actions a player performs during the game and divides this number by the duration of the match. The resulting average allows STARCRAFT players to compare with each other. Players act on the assumption that an experienced player decides quicker and clicks faster, resulting in a higher APM value. It is of course questionable whether this factor really has

any significance. However, what is important here is the underlying normalistic process, similar to the one we discussed in SUPER MARIO BROS. Different actions and qualities again are reduced to one number that becomes comparable on a single scale. After calculating APM values this way, players post their thoughts about normal APM using message boards online.

Here are two examples (from *www.wcreplays.com* and *www.starcraft.org*):

- But still:
  APM < 50 is simply not enough imho
  APM 50-80 is average player
  APM 80-150 is good (as far as the RIGHT actions are made)
  APM150-240 is gosu (or a lot of spamming)
  APM 240+ is drugs or neural interface instead of keyboard and mouse
- IMO APM comes in quantum packs. Here's how I relate APM to players:
  Below 40>SC.org
  Below 100>NEWB
  Below 200>Normal
  Below 350>Better than Normal
  Over 350>V.Good, Pro, Gosu
  Over 600>Inhuman, a human brain can only transmit 600 orders to your hand in a minute.

What players actually describe here is a bell curve, with a normal range in the middle and extreme positions at both sides. APM is then used on several websites which offer replay-files for download as an indicator for the quality of the match. Certainly, we see that while normality is not constructed inside of the game, players bring their knowledge of normality and its constructs with them from the physical world.

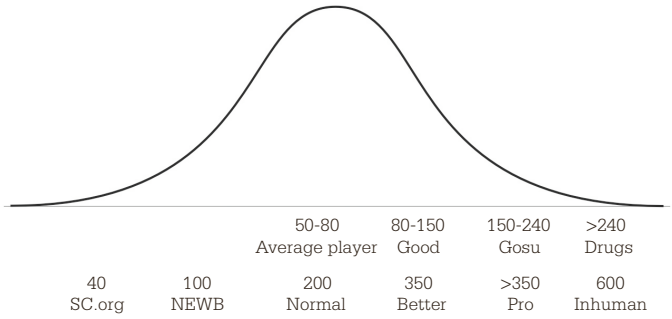

Fig. 5: Players discuss the "APM bell curve."

We see that the categories of normal and abnormal emerged in succession to the avalanche of numbers. Since then, normality has had a major impact on modern everyday life, shaping our understanding of science, health, sexuality, and performance, amongst other things. Statistics and info-graphics of all kinds play a crucial part in establishing what is considered normal. Computers, on the other hand, have a very close connection to statistics as the digital world is a statistical one in itself. Many games use statistics as an element of gameplay and therefore, constitute themselves as training in self-normalization and self-management. Whether we watch television, read newspapers, or play video games, we cannot escape normality. As we have seen, games reproduce knowledge about the production of normality, especially knowledge about statistics, competition, and performance. However, the understanding and occurrence of normality in videos games is still emerging. Although games, in contrast to other media, offer a new scope of action within the medium, it is still questionable whether there is a genuine production of a specific normality within the digital game world. In this way, the avalanche of numbers has not yet fully reached the digital world of numbers to the same extent as the physical world – at least, not yet.

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