# A study on repetition and causes of addictive gameplay

Part I: Introduction & Driving Forces

Stopwatch is a collection of games, made with the intention of studying the reasons behind addictive gameplay. With the help of these games, it is much easier to observe players and analyze their gaming experiences, since the games are devoid of all sources of fun except achievement through progress. Thus, through a context-free environment, it is possible to study the essence of the game, avoiding the obstacles presented in other games by the graphics, story or other diversions.

Stopwatch is based on one simple game mechanic: a progress bar. It increases, it shows the player's progress, and it allows the player to feel rewarded for his work. Players can clearly see that they are advancing, as they play. The constant process of setting a goal, achieving it, and setting a new goal, is the foundation of most modern games. Most games try to conceal this with immersive graphics or a complicated storyline to prevent their players from learning how simple the game is, and see how futile it is to pursue the next goal. In stopwatch's case, the process is clearly visible, and the players are fully aware of the futility of their actions, which is perhaps one of many reasons that make stopwatch a game not meant for the mass market.

The inspiration, the urge to create this game, and to make this study, has come from many years spent on playing games that are incredibly shallow gameplay-wise, yet still manage to entertain an adult for hours or days. The MMORPG genre is the most clear example of this, as the gameplay is always extremely repetitive and the only compelling reason to play the game is to get to the next level, or kill enough creatures to finish the next quest. Of course, people also "play" MMORPG games to talk to other people, to socialize, but that is not done through game mechanics, simply through the chat panel. Thus, it can not be considered to be playing a game. After all, this same activity can be done using IRC, and IRC is clearly not a game. However, even though it is not a reason to play the game, it can be a reason to stay in the game. Besides, with the correct design, a game can force the player to continue advancing in order to be able to chat with their friends, as will be detailed later in this essay.

Most ideas of the Stopwatch games are taken from games of the RPG genre, primarily because this genre contains the most number of games that focus on achievement. The most common example is the experience system used in almost every RPG game in the market. The game *Elder Scrolls IV: Oblivion* allegedly allows the player to do anything they want in the game world, to freely roam the world, but there is little reason for the players to do so, apart from the rewards they get from using their skills while doing so – the increases to their respective skill levels. Thus, players are encouraged to jump repeatedly to increase their athletics skill, or cast buffs on themselves in the middle of the city to increase their magic skills. Pointless activities become meaningful through the rewards. In most MMORPG games, the concept of achievement through repetitive action is all there is to the game: kill creatures until the next level is reached, kill stronger creatures until the next level is reached, and continue on until the level cap.

Some games add a little variety by including quests that ask the player to kill a massive number of creatures. Crafting in such games is also done in a similar fashion – craft countless items to get better at crafting, at which point the player gets the ability to craft better items, that he must craft countless times again to get to the next tier. These become sub-goals for the players. Most players are more interested in short term achievement, and do not particularly enjoy working towards long term goals until they are close to accomplishing it. Thus, the designers include these sub-goals to keep players interested. When various sub-

goals are introduced, and they can be worked on simultaneously, the player can finish one goal just to notice he is close to finishing another. Thus, if done correctly, sub-goals make games much more compelling and addictive.

In the MMORPG game *Lord of the Rings Online*, players earn "deeds" for almost every action they take. There are deeds for slaying a lot of enemies of the same type (such as orcs, sickle flies or bears). Then there are deeds for using most of the characters' skills (some for using specific skills, some for using a set of skills). In addition, there are deeds that can be obtained by social interaction – these deeds are accumulated when other people use emotes on the player. For example, if a hundred characters bow to the player, the player becomes able to use a new emote, the "heroic pose". Similarly, if a hundred characters hug the player, the player earns the title "the adorable".

The overwhelming number of deeds presented by the game allow players to always have a reason to continue playing. The player might first want to finish all the quests in an area. When he is done, he might be close to finishing off a slaying deed, so he might kill creatures of that type before leaving an area. Afterwards, if there is still a gap of experience that needs to be filled before he can start doing quests in the new area, he can take a look at his skill based deeds and decide to finish off one of the deeds that is almost complete, as it relates to a skill he has been using all along. If all else fails, he can go back to the town, and work on improving his crafting skills until he can find a group so he can complete more difficult quests.

All in all, Lord of the Rings Online presents its players a lot of progress bars, which slowly increase by themselves as the players engage in the gameplay. The player continues to play the game as long as he is close to completing one of these deeds, and while he finishes it off, another deed gets close to complete. Luckily for the player, the developers did not wish their game to be overly addictive, so they have put a limit to the number of increases a character can have in one deed in a single day. This limit only exists on some deeds though, so there is always something a player can do if they wish to continue playing. It simply becomes less addictive though, as the player will experience the thrill of being close to completing a goal less often as less goals are worked on at the same time.

RPG games are not the only example of repetitive gameplay; it happens in almost every type of game. In *Sid Meier's Civilization IV*, once a player gets accustomed to the game, and starts becoming experienced, he devises a build order for himself, such as "two workers first, then a settler, then the Stonehenge", and starts every game in the exact same way, doing the same things over and over. Furthermore, most players have their priority list in mind when building improvements for cities, so for example, a certain player might want to build a forge, followed by a granary, factory, library, university, temple and monastery in every new city. Since in an average game the player builds or captures dozens of cities, he has to build all these structures one by one in all the cities he owns. *Civilization 3* allowed players to automate this process, which has not been carried into the sequel for unknown reasons.

Strategy games are common ground for such repetitive tasks. In every RTS game, an optimal build order is vital for success. In a tournament game of *Age of Empires II: Age of Kings* between professional players, it is not uncommon for every person to pick the same civilization, and advance to the feudal age on the same second, a little after the eight minute mark. However, having a lack of choice does not make these first eight minutes any less crucial. In fact, being a few seconds late is often a reason for defeat. So not only do players do the same actions every game, they are punished if they can not do them.

Other types of games also have various degrees of repetition. In most *Tekken* games, an experienced player can win a match by simply selecting the character King, and executing a combination of grapples one after another. Once the first grapple is initiated, the player does not even have to look at the screen. He simply has to press the next fifty or so keys in the right order and speed, to kill his opponent. The player can finish the game, simply by repeating this move every match.

But what makes this enjoyable to the player? Why do players spend hours doing the same things over and over? Perhaps the same reason they go to work every day: advancement. As Nick Yee states in his essay *Motivations of Play in MMORPGs*, players who play for achievement "derive satisfaction from reaching goals, leveling quickly and accumulating in-game resources such as gold. They enjoy making constant progress and gaining power in the forms offered by the game - combat prowess, social recognition, or financial/industrial superiority."

Just as people work every day to earn money and improve their lives, they play these games to become better at them. In *Tekken 5*, the player may keep winning using the same moves every match, to make it second nature, to test it for possible flaws, and overall, to become perfect at it. Then, they can show their level of mastery to their friends, proceed to beat any challengers with it, or just sleep well knowing they are good at something.

In other games, like *World of Warcraft*, the initial process of repetitive "grinding" which takes weeks or even months for a casual gamer, is only the beginning. In these games, the player only wishes to do these repetitive tasks to reach the level cap, so he can finally start enjoying the majority of the game content; what he really paid for. In fact, this "grind" is so frustrating for some players, they pay money for third party groups to level their character. Indeed, why would a businessman with a family want to spend what little time he has, repetitively killing creatures every night for three months, so he can finally reach the level to start playing with his high level friends? Instead, he pays these third party groups a measly sum of a hundred pounds, and gets his character "powerleveled" to the level cap in less than a week.

But why is this repetition part of the game if it is not even enjoyable? Why is this repetition in the game if it is so terrible people pay others to do it for them? It seems to mainly be there in order to generate more revenue from monthly subscription fees. In any case, that is not relevant to this study. What is relevant is that this repetitive process is actually enjoyable for some people, who like doing this over and over, and have multiple characters at the level cap, all leveled by themselves.

This concept of repetition has been the first and foremost focus of Stopwatch, but a secondary focus was also always present: the community. As Yee states, gamers who play for the community "enjoy meeting and getting to know other gamers. They like to chit-chat and gossip with other players as well as helping out others in general. (They) form sustained, meaningful relationships with others. They typically seek out close online friends when they need support and give support when others are dealing with (real life) crises or problems."

It is important to establish a community for a game for many reasons. The primary reason for a singleplayer game to have an online community is diversification. Very few games get changed after release, through patches. Most games do not change at all, but a community formed around the game can keep players interested for a long time. Even though the game does not change, the players of the community do, and as they grow, they find new ways to enjoy the old game, and share it with each other. Thus, establishing a

community is vital to promote longevity in a game.

Games with online communities often have trends. In an RPG game, many players might pick the same class because it has most guides written for it, and even more players would join them because they would want to go with the crowd. Then a new discovery, a good in-depth strategy guide for a different class, or a similar reason might lead to many people switching to a different class, and many people would follow the crowd. Even though the game itself does not change, the experience constantly changes when players are part of a community.

One of the most solid examples of this is the evolution of strategies for the strategy game *Age of Empires II: Age of Kings*. First, the majority of the players favored strategies involving rushes in the castle age, with strong mid-game nations. Over a few months, a response to this was developed in form of a quick feudal age archer rush strategy, aiming to reach feudal age as early as possible and make a few archers to cripple the opponent's economy before he can reach the castle age. Months after this, players started to develop and use new strategies that involve around heavy feudal age warfare, taking a bit longer to reach the feudal age but with a stronger economy, so they can withstand prolonged feudal age battles. Instead of archers, skirmishers started to be used, as they are strong against archers (which is what they want to prohibit their opponents from using).

As can be seen, this entire flow of strategies over the course of almost two years was solely because of trends set by the player base. Someone would write a strategy guide, everyone else would follow it until someone came up with a counter-strategy, at which point everyone would switch to the new strategy. Although the game received a negligible amount of patches, the gameplay evolved significantly, and kept the players entertained for an impressive length of time. This was all because of the gaming communities, fan sites and forums dedicated to the game.

There are various ways of creating a community for a game, bigger companies have "community manager" positions specifically allocated to this task, continually monitoring the community and allowing it to grow. Stopwatch tries to create a community by having dedicated forums for discussion of anything related to stopwatch, as well as off-topic forums for other needs of the players. This allows the players to share their experiences with each other, boast about their streaks, or show their level records to other players. Perhaps, even new trends can develop for some of the more complicated modes like the competitive game.

The second, and more direct way of creating a community is by allowing users to chat to each other. This is predominantly used in online multiplayer games. Strategy, RPG and MMO games all reinforce their web based communities with in game communication channels. Some games, like *Lineage 2*, even allow players to log into MSN from inside their game, chatting to their MSN contacts from within the game. Most games do not allow players to join these game channels from outside the games, forcing players to keep their accounts open if they wish to keep in touch with friends, and stay as part of the community. Some exceptions exist; for example, it is possible to join Battle.net channels with external chat clients, to chat to people playing Blizzard games using the system. However, since Battle.net does not have a monthly subscription fee, the developers have no reason to disallow this.

The Stopwatch MMORPG as well as the Stopwatch Domination games allow players to chat with each other, and Domination even sets limitations, giving players of each faction private chat rooms they can use to trash talk or backstab their enemies. These games also allow players to earn new titles and medals, which

may give them social privileges depending on the way the community evolves. The community might want the "Lady of 14" to organize an event for valentine's day, or they might choose a war veteran with "Greenland Assault Platinum" to lead the new invasion to Australia because of his previous experience in similar battles.

The third way in which communities can be a part of the reason a player plays a game is through direct social achievement. More popular in console games and in local arcades, this type of socializing primarily involves a player showing off his skill to entertain the crowd, who in turn express their admiration. By becoming good at a game, the player can become a local legend. He can earn new friends, and feel like he is special. Again, the most popular example of this is playing Tekken 5 in the local arcades, and showing off by winning in obscure ways, blindfolded, with one hand, or both. Another way of doing this that is becoming very common is recording a game and uploading it to a video sharing website such as youtube. Perhaps one day, videos of stopwatch players doing streaks or difficult combinations might become available for viewing in such websites.

In summary, stopwatch aims to make repetition enjoyable in two ways; through a sense of achievement, and a strong community. Another point of view must be explored though: what makes repetition not enjoyable? Perhaps the feeling of helplessness that comes with it; if the player has a lack of choice, and is forced to do the same thing every time, he will not be able to exercise his creativity or free will. If he is not able to bend the game to change his gaming experience, this will have a negative effect on the pleasure he gets out of the game.

In addition, the feeling of pointlessness starts becoming dominant as the player gets bored of the repetition. This is true because of human nature – any activity can become boring when repeatedly done over and over, in the same way. The player starts asking himself why he is playing the game, and starts to think it is pointless. Of course, gaming is pointless anyway, the reason they are played is for entertainment. They do not serve a greater purpose. The player realizes this when the game stops being entertaining – thus, repetition in itself does not make a game pointless. It only speeds up the process of realization for the player, if done in the wrong manner. If done right, it can actually prolong the process, slowing down the rate at which the player exhausts the game content.

These are two primary concerns that arose when designing stopwatch; two obstacles that had to be overcome to make the game enjoyable. The next part explains the details of the design decisions, and the reasons behind them.

Part II: In Depth Analysis of Stopwatch

Stopwatch is a collection of five different game modes. The initial concept is presented by a two digit timer to provide the challenge, and a progress bar to monitor the achievement level of the player. Through pure repetition, the player is able to progress through the levels. However, this basic concept branches into two different game modes. One game mode, the "basic" mode requires players to enter certain streaks between each level, to add an additional challenge and to provide variety. This makes the game different on many aspects; the players are able to work towards the next level to reveal the new combination, thus, they can play for exploration, rather than achievement. In addition, the levels in this version of the game reflect the players' skills in addition to the amount of time they have spent playing it. No matter how long someone

plays, they will not be able to get through a difficult combination if they do not have the skill to get through it. This makes the game mode a bit more appealing to players interested in competitive gaming. Overall, this game represents the RPG genre, with leveling as the long term goal, and challenges (representing boss fights) to provide variety; additional game content to explore, discover, and share with friends.

To prevent players from repeatedly stopping the timer and scoring by pure luck, the game imposes a half second cooldown after every stop, during which period the player must not try to stop the timer again. If he does, the cooldown starts over. Thus a player needs to stop pressing the button if he ever wants to get out of the cooldown cycle. This does potentially make it somewhat more difficult to enter streaks such as "07 14 21 28 35" as players need to wait 107 ticks instead of 7 between each stop. The longer the wait, the harder it is to time it. Or at least, the time lost for a failed attempt is much longer. It was possible to remove this cooldown during the streaks, but this was deemed unnecessary, as the streaks were to represent difficult challenges, and there was little reason to make them less challenging – the more difficult they are, the higher the satisfaction from completing them.

The other game mode the initial concept branches to is the "Grind" mode, where the streaks are not part of the game at all, the repetition is given extra weight, and the numbers are adjusted to try and hide the slow progression speed. Even though this game mode requires 8 scores to get to level 2, the game displays a goal of 400 points to advance. However, every score gives the player 50 points. Furthermore, these numbers both increase every level, so the player starts getting more points for every score. Thus, when comparing scores, the difference between players increases exponentially over time, leading players to believe they are much further ahead of someone when they may in fact be quite close.

This game mode has the disadvantage of being completely repetitive though, yet it is necessary to have a game of this type to compare to MMORPG titles, and aid in their analysis. In fact, the numbers chosen for the points gained by scoring each level, and the points needed to get to the next level, are taken directly from the game World of Warcraft. They correspond to the amount of experience points required to level up. By being so repetitive, and having little content (no streaks), the game becomes much easier to expand. By simply increasing the level cap, the game can give players new goals. There is no need to create new challenges for every new level, nor is there a need to test these new challenges to see if they are too easy or too difficult. The game just needs to provide players with the ability to further progress in the game, by adjusting a few numbers.

Although being so repetitive has its advantages, it also makes this game more susceptible to botting compared to the other game types – it can easily be accomplished through the use of a key presser, set to trigger at the right time period. This allows any player to get to any level they want effortlessly in no time, if they have the right tools for the job. However, there isn't a strong reason for doing this, since there is no "endgame content" that becomes available, and the game is not multiplayer, meaning a player does not need to worry about being the same level as his friends. Players might still "bot" their way through the game, if only to learn what the level cap is, and how long it takes to get there with a perfect game.

While these two game modes mainly focus on achievement, the third game mode, the "MMO" mode tries to make the game attractive through the integration of gameplay into community, making the achievement linked to social privileges. There are a hundred progress bars, each representing a single number. Players can advance in any number they want, and each of them gives equal benefits. Most importantly, progressing in a number allows a player to rise up in the ranks of that number's online ladder, viewable through the

webpage. Top ranks of each ladder carry with them prestige and fame.

In addition, special ladders such as the ladders for prime numbers, squares of 2, squares of 3, multiples of a number, the ladder of all numbers, and ladders of some number series (such as the ladder of 1 to 10) allow players to work towards many many goals at the same time, simultaneously. The players' scores in these ladders are the sum of their levels in all the associated numbers. Just by increasing the number 77, the player can work on the ladders of 77, multiples of 7, multiples of 11, all numbers, and 75 to 80. This generates the aforementioned continual addictive impulse, urge to continue playing, associated with being close to completing a long term goal.

In addition to the sense of achievement, the high ranks in these ladders carry another significant benefit: social privileges. For example, there are private chat channels only accessible by the leaders of each number ladder. The names of players are color coded according to their best rank in the ladders; players in the top 10 of a ladder have blue names, top 20 have green names, top 50 have red names, and the rest have gray names. The game allows players to "filter out" messages of low ranked players from their chat windows, thus, for example, a player who is $17^{th}$ on the ladder of 58 might not want to hear about the opinions and daily lives of players who are not even good enough to be in the top 50 of a ladder. In addition, top ranked players in ladders are allowed to choose titles such as "Lord of 62", "Lady of the multiples of 7", and "Master of Prime Numbers", which they can use instead of their nicknames during chat sessions.

By forcing players to keep playing in order to retain their rank, so they can stay as part of their community and use the chat channel, the game hopes to successfully mimic the hardcore guilds of MMORPG games. Yet another feature it uses to mimic MMORPG games is the combo system. By entering a combination of numbers in order, players can execute a combo, which makes the screen of the player flash and shows a pretty picture. These combinations are merely executed by pure luck, as they constantly reshuffle and it is not possible for players to actively work towards them in an efficient manner. However, these pictures make the players want to play more so they can see more of them, similar to how players keep playing in order to see the new graphics of bigger bosses or better items in an MMORPG. As Yee states, players who play for discovery "enjoy exploring the world and discovering locations, quests or artifacts that others may not know about. They enjoy collecting information, artifacts or trinkets that few others have." Players can take screen shots of these pretty pictures and post them in the community forums, boasting and showing off their trophies. Players who are more into this kind of activity can even record their gameplay sessions with an external utility, so they can post them on video sharing websites such as youtube, if they get lucky and score multiple combos in a row. Since these combinations are merely luck based, this activity can be compared to a player posting a video of his character killing multiple characters in a row with lucky critical hits in an MMORPG game such as World of Warcraft.

An interesting experiment is also being done in the area of virtual economies, by the Stopwatch MMO; players occasionally get gold coins, and rarely some items as they play the game, while some of them are just for novelty, or for seasonal specials (like heart candy or snowballs), some of them give players a few points of bonuses in a bar or two. The majority of these items are useless to the player because it gives bonuses to the wrong numbers, and these need to be traded away, either using the trade chat channel, or the trade forums. What is interesting is that gold does not have any use in the game except the buying power it grants the players. It is not used to buy services from NPC vendors like other MMORPG games, nor is it used to pay for repairs or monthly rent. Thus, gold in the game only has as much value as the players assign it.

It may end up not being used at all, like in the game *Diablo II* where gold was so abundant it was worthless, and players used "stones of jordan", a semi-rare unique ring, as currency. It would be interesting to see how the player base responds to an economy where there is no guideline price for anything. Or it may end up becoming interchangeable with real money, if third party groups start offering to sell gold for real money, or offering to sell commodities the players might be interested in buying for game gold. For example, websites such as Markee Dragon ([www.markeedragon.net](www.markeedragon.net)) offer players of the game *Ultima Online* the opportunity to buy character transfers, expansions, and even game time with game gold. This elevates the game economy to an entirely new level, as players "work" inside the game in order to earn enough gold to pay for their next month, or sell off some of their valuable items in order to move to another server. These are just two examples of how an unmoderated economy can branch into various extreme levels.

These three game modes cover a majority of the issues associated with RPG games. However, to broaden the range of the study, the fourth game mode takes a different approach to the system: It focuses on competition and teamwork. As Yee states, "(Players who like competition) enjoy competing with other gamers on the battlefield or economy. They also enjoy the power that derives from beating or dominating other players. (Players who like teamwork) enjoy working and collaborating with others. They would rather group than solo, and derive more satisfaction from group achievements than from individual achievements." Indeed, players who wish to compare their skills to others might find the ladders presented by the MMO game too indirect, wanting more direct confrontation with their rivals. Another reason might be players not wanting to spend hours upon hours trying to catch up with their rivals; they might just be looking for a short game rather than a long commitment. Or, they might just be looking for something that they can do together with their friends, as a team. The other games can not provide any of this, which is why the fourth game mode diverges from the original system: to appeal to different tastes.

Stopwatch Competitive still has a two digit timer, that is shared between all participants. It does not, however, focus on achievement. It allows players to push five bars, each representing an interval (0-19, 20-39, 40-59, 60-79, 80-99) towards the other team, and every bar that becomes filled gets locked. Players win by locking three bars. This game type requires coordination between players, and planning in advance certainly helps, as does being able to make quick decisions. By designating emergency roles, having backup plans, teams can communicate and play more effectively. This game type, with its repetitive gameplay that requires strategic planning, quick thinking, and coordination to win at, represents real time strategy games, and to a lesser extent, team based shooter games.

Players coordinating their attacks in a single interval in Stopwatch Competitive can be compared to players using their armies to strike the same location in a real time strategy game. Planning in advance can be compared to making build orders. Abandoning an interval to the enemy in order to take advantage of an opening in a more important bar can also be compared to similar maneuvers in both real time and turn based strategy games. The fact that all of this can be emulated by a simple timer and a few bars shows how much potential a challenge posed by a simple repetitive process can have. This game mode is very simple, and has a lot of potential for growth.

The 5th game mode improves on the potential of the Competitive game idea, by turning it into a massively multiplayer game. It takes the base gameplay that emulates strategy games, and infuses it with game features that add a sense of achievement and community to it, similar to what has been done with the third game mode. First, the game is taken to a larger scale in order to accommodate a massive number of players. This is done by creating a whole network of "nodes", one for each major city or region in the world, and linking

them together. In each node, a separate game of Stopwatch Competitive is ongoing, and these nodes represent battlegrounds. In order to initiate an attack on a node, it needs to be connected to another friendly node. Thus, the game works similar to the famous tabletop game Risk.

Second, the sense of achievement is infused into the game. The first way in this is done is by giving medals to players as they play the game. Similar to ladders in the Stopwatch MMO game, multiple medals can be worked on simultaneously, for example a player who is participating in the assault of the node in Mexico can work on 00-19 assault, Mexico assault and south America assault at the same time, as well as the global assault, and global warfare. These medals carry with them prestige and fame, just like the ladders of the MMO game. This generates the same continual addictive impulse, urge to continue playing, that is present in the MMO.

Just like the ladders, the medals bestow social privileges upon their holders. For example, similar to how Command Ranks work in the game *Planetside*, these medals give players additional communication aids. Only the highest ranking soldiers have the right to broadcast messages across the globe. High ranking players can discuss strategies in their private command channels, and low ranking soldiers can send situation reports from the field, that need to be processed by the mid ranking soldiers before they make it to the high-ups. With these restrictions, a hierarchical structure is tried to be created, where the players not only simply earn points in a virtual world, they earn respect from other players, at least during the game.

In addition to trying to create a hierarchical structure, the game also tries generating friction between the three player blocks that fight for each faction. This is done by giving each faction their own set of channels so they can not talk to each other. Each faction also has different unique avatars to choose from to represent their characters, and more avatars become available as players earn new medals, similar to the ladder system of the strategy game *Warcraft III: Reign of Chaos*. By giving each faction unique gifts, the game aims to generate jealousy, leading to players wanting something the other faction has badly, but being unable to switch to the other faction because that would make them lose their access to the chat channels, that they used to talk to their friends and the community that they have grown accustomed to in.

To compound this, there are ideas for this game mode that involve capitulation and guild wars. Large guilds are allowed to choose a home city, and become independent through an insurrection. In this way, factions may eventually become obsolete and the entire game world might become controlled by guilds. Of course, every guild would have their private chat channels just like factions. What compounds this is the fact that soldiers losing a battle need to fall back to an adjacent sector. Thus, if they are surrounded by enemy sectors, they become prisoners of war, and need to be traded back to their guild or faction. They can also choose to betray their faction, and join their capturers. Or, they can choose to retreat to another faction's territory if that faction grants them safe passage. They can also join another faction in this way; rather than be captured by a hated enemy, they can choose to join the lesser of two evils.

This idea of capture adds a unique twist to the game: guilds might try getting to their surrounded soldiers to rescue them before they get captured by the enemy. They might enter diplomatic alliances with nations bordering their enemies so they can use them for safe passage. In addition, captured soldiers need to choose between their friends, and their game time: if they join the other faction they can continue playing without waiting for their guild to rescue them. However, they would not be able to talk to their friends in their previous faction anymore. From the perspective of the conquering nation, it is important to flank the enemies so they can be surrounded and captured. Players will be seen as resources, and will have to get used

to the idea of being "stolen" and "traded" between guilds like objects. Good friends will try to always fight in the same battlegrounds, so they fight side to side,  getting captured together if they lose, so they can continue playing together as part of the enemy faction.

Another idea that could be incorporated into the game would be official diplomatic relations. Along with the ability to forge diplomatic alliances between multiple guilds (like a league of nations), this idea allows guilds to trade or extort land from others. The advantage of this over capturing them by force is that every guild has a warfare rating, and acquiring land by diplomatic means does not increase this. A guild's warfare rating negatively affects their political standing, which in turn reduces the effectiveness of the votes of the guild's officers in alliance polls. Thus, officers wish to have as little warfare as possible, so their precious opinions can count in alliance decisions. However, the average soldier in the guild wants action, so he can gain new medals, and get to a higher rank. This generates constant friction between officers and soldiers, causing guilds to split apart, and makes it very difficult to keep a large guild alive for a long time.

In addition, this system generates disputes between guilds in the same alliance; the officers of guilds who do most of the battles, have the least political power when it comes to decisions. The officers of guilds who sit back and do less work get to decide on where the alliance needs to fight, and they use their "lackeys" to do the dirty work. Thus, large alliances are difficult to maintain, and guilds who want to engage in constant warfare need to do it on their own, if they wish to pick their own battles.

Overall, the Stopwatch Domination game mode tries to study the extents to which social engineering can manipulate virtual communities; how to generate friction between players. As Daniel Pargman and Andreas Eriksson explain in their essay *Law, order and conflicts of interest in massively multiplayer online games*, "In huge online games where great numbers of players can be connected at the same time, social interaction is complex and conflicts become part of everyday life. There is a set of rules and norms in the game for what is allowed and what is prohibited and these are partly set up by the game publisher and partly evolve among the players themselves over time." The developer has a certain amount of power over the way the players act and how they treat each other. It is possible for players in stopwatch domination to become good friends in one week only to become sworn enemies, because of disagreements in decisions they are forced to make by the game, a week later. Bypassing or avoiding these restrictions in various ways whenever possible to play together with friends would be the real challenge of this game mode.


Part 3: Further Ideas & Conclusion

These are five different games that can be played by a simple stopwatch. Unfortunately, as simple as it is, a stopwatch is not a particularly attractive or fancy concept. However, this two digit timer can be replaced with any other repetitive activity to appeal to a specific crowd. To make a game for hunting fans, the timer could be replaced by a display with a rifle crosshair in the middle, with ducks crossing a river, passing through the crosshair periodically. Or, it could be replaced with an animation of two robots fighting on the screen, and the player's robot would periodically raise his arm in the air, at which point the player would have to press the button to make him hit the enemy and score. Any number of games can be made with this infrastructure. They merely need to be created as "skins", and any player can choose to play with whatever skin they wish to use.

This would lead to yet another interesting experiment, if the players of the competitive game use different skins during a game, and later meet up to talk about their games. One of them could talk about how he shot three ducks in a row in the leftmost aisle (corresponding in stopwatch to the 00-19 interval), while the other would get confused, as he would not realize that the event he was referring to would be the winged robot (corresponding to the same interval) striking their defender three times in a row. Even though these players play together in the same game session, they have completely different narrative experiences.

Making and playing the game modes outlined in this essay have proven to be a great way of studying addictive gameplay. Some players found it attractive in a strange way – it is repetitive, but at least it is honest about it. Others found it appalling, when they were confronted by the truth in its raw form, that the game was all about filling up the progress bar so they can fill it up again. Most players who have played stopwatch, and understood the games it represents, have shown changes in the way they see and play other games it relates to.

The competitive mode was surprisingly fun when played by multiple people on the same keyboard. This was perhaps because of the social atmosphere in the room, compounded by the fact that every player was aware of how simple the game was. It was amusing to see a group of players enjoy playing a game so simple, most of the pleasure the players had was perhaps because of the amusement as well. This all goes to show that, the depth or context of the gameplay is not relevant to the amount of fun players can have, as long as the activity is done in a social environment.

This leads to another potential area to extend the stopwatch idea: a board game. The box would simply have a stopwatch, and some tokens used to represent points. The players would take turns to stop the watch, and every time someone stops it at 00, they would get a token. The first player who reaches the preset amount of tokens would win. Even a simple board game like this could be a lot of fun if played by a group of people, that simply wish to socialize and have fun together. This is all perhaps another application of making gameplay attractive through the use of a community.

Overall, Stopwatch has been, above anything else, an interesting experiment. Unfortunately, it has not been able to see many users, and the test results were quite limited. Most of the study had to be done using hypothetical figures and speculation. It would be more satisfying if by the time this is essay is written, more detailed test results were available, providing solid evidence to back up the ideas presented by this essay. Unfortunately, it was not possible to receive results within the given time, using the limited resources (aka players) at hand. Still, more results will become available over a few years, as the game becomes better known, and more players download and play it.

Until then, the most important result that can be derived from Stopwatch is that even a simple repetitive timer can represent the challenges of many genres of mainstream computer games, and can be made addictive through the use of two main methods: the use of multiple goals progressing in parallel, constantly alluring the player to finish off the last few points in one goal only to become close to finishing another, and through introducing a player to a community, giving him the freedom to become friends with other players, then forcing him to continue playing in order to stay in touch with them.

Whether it is moral to make a game addictive or not, was beyond the scope of this essay. However, the essay has hopefully shed some light into addictive games, making them easier to identify, and outlining the ways in which they pull the players into the game world, and make sure they stay for a long time.

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