Build Theory in Guild Wars and World of Warcraft

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1. INTRODUCTION

Massively Multiplayer Online Games (MMOGs) have introduced a new genre of play of where hundreds of people can interact with each other simultaneously in a virtual, graphical environment [1, 2]. These immersive games often take place in medieval fantasy settings or futuristic science-fiction worlds [3, 4].

To interact in these games, players create characters, or "avatars," that represent themselves. The appearance of these characters can be customized by the player, including physical features (facial expression, skin tone, hair style, or height), gender, and race (human, dwarf, or elf) [5]. The player can also choose a class or primary role to play (caster, healer, or fighter).

This paper will investigate an emerging concept that has recently arisen in the MMOG gaming community called "build theory". Build theory describes a process by which the player chooses the skills and attributes/talents for his character in order to successfully accomplish his purpose or goal in the game. From a technical standpoint, a better term might have been "build methodology"; however, since "build theory" is the term being used by the players themselves, this is how it will be referenced throughout this paper.

Build theory is of particular interest because of the way it describes the cognitive process players undergo as they develop their characters. This process is largely collaborative, but is individualized by each player’s own experience. Under build theory, a player's approach to character development evolves as he becomes more aware of the resources available online and gains a better understanding of the game mechanics, or game rules. This in turn enables him to understand what is necessary to be successful in the game and apply that knowledge to choosing skills and attributes/talents to be more successful in accomplishing his personal goals. In addition, a better understanding of the game creates a better understanding and utilization of the collaborative resources available.

While there has been research performed on MMOG players, search of online references revealed no examination of build theory in the current literature [6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17]. This paper will focus on the individual player and the class and associated skills he can use. While prior research on MMOGs has tended to focus on personal aspects of the players, build theory focuses on players strictly as developers of avatars.

Two games, Guild Wars¹ (GW, www.guildwars.com) and World of Warcraft (WoW, www.worldofwarcraft.com), were selected to illustrate the similarities and differences in game mechanics. These two games were chosen because of their large player base, similarity in setting and environment, and the ability to re-customize a character without having to create a new one. This last characteristic is important in illustrating build theory, because it allows a player to explore a specific class in many possible ways without having to spend time to build up a new character from scratch.

To develop this paper, ten players from GW and ten players from WoW (two players fell into both categories), were interviewed. In each case, a core set of questions were asked, including how long they have played the game, what class they primarily play, if they have heard of build theory and what they think it is. Results and conclusions drawn from these interviews are presented below.

¹ Although Guild Wars fits well within the general definition of an MMOG, some developers argue that it is not actually a MMOG, since the game does not maintain a persistent zone. This distinction is irrelevant for the purposes of this paper.
Guild Wars

Guild Wars is a game designed and developed by ArenaNet, produced by NCSoft, and was released in April 2005. As of the time this paper was written, the Guild Wars franchise encompasses three full games (Prophecies, Factions, Nightfall) and one expansion, also known as a subgame (Eye of the North). The games all have a fantasy feel to them, but each also has its own cultural influence. Prophecies is set in a European medieval world where a human kingdom has lost the battle against the Charr, a feline race, and now the humans must find a new home and deal with new conflicts along the way. Factions has an East Asian theme where the country is split between two warring factions, but a common foe unites them. Nightfall has an African theme where a war marshal seeks to revive a dead god, and a small resistance group must stop her. Eye of the North features a combination of Scandinavian and South American influences, separated by regions in the game, and seeks to tie up loose ends in order to provide a transition into Guild Wars 2, not yet released.

Although there are a few intelligent races, the only playable race is human. There are six core classes and four additional classes, two specific to Factions and two specific to Nightfall, for a total of ten classes. For this study, all ten classes were considered. The following is a list of the classes and a general description of each.

- **Warrior** – a melee class that specializes in swords, axes, hammers, and tactics.
- **Ranger** – a ranged class that specializes in bows, beast mastery (having an animal companion), and setting traps.
- **Monk** – a healing class whose purpose is mainly to restore health, remove degenerative conditions (i.e. poison), but is also capable of dealing damage by smiting.
- **Elementalist** – a caster class that specializes in air, earth, water, and fire magic.
- **Mesmer** – a caster class that specializes in illusions and hexes meant to cripple opponents so that other party members can finish enemies off.
- **Necromancer** – a summoner class that specializes in raising undead minions to deal damage against enemies, casting curses, and self-sacrifice magic for the benefit of teammates.
- **Ritualist** (pictured in Figure 1) – a summoner class that communes with the spirit world to propitiate their aid in battle.
- **Assassin** – a midrange class that specializes in dual-wielding daggers.
- **Dervish** – a midrange class that specializes in scythes and close-range combat.
- **Paragon** – a midrange class that specializes in spears and uses shouts to moralize a party.

![Figure 1. A Ritualist.](image)
World of Warcraft

World of Warcraft is designed and developed by Blizzard Entertainment and was launched in November 2004. As of the time this paper was written, there is one expansion (*The Burning Crusade*) released in January 2007. Also fantasy based, WoW has different playable races, including traditional races such as elves and dwarves, as well as original races such as the Tauren, a bovine-like race, and the Draenei, a more alien race. Due to the playable races, there is no set storyline, but players can choose to do quests either with those affiliated with their own race, with another race, or a mix. There are nine classes total, but not all are available to every race. The following is a list of classes and their descriptions.

- **Warrior** – a melee fighter class.
- **Hunter** (pictured in Figure 2) – a ranged class that primarily uses bows and/or guns and an animal companion.
- **Priest** – a healing class with the option to be able to deal damage by Shadow magic.
- **Mage** – a caster class that deals elemental damage.
- **Rogue** – a melee class that specializes in poisons and fast damage.
- **Druid** – a hybrid class that can either deal damage or healing, with the ability to shapeshift.
- **Shaman** – a hybrid class much like the druid, but uses totem items to deal damage or heal.
- **Paladin** – a melee fighter class that is capable of healing and affecting others by auras.
- **Warlock** – a caster class with a connection to the demonic realm and is able to summon a demon companion.

![Figure 2. A Blood Elf Hunter.](image)

2. BASIC GAME MECHANICS

Game mechanics are “rule based systems/simulations that facilitate and encourage a user to explore and learn the properties of their possibility space through the use of feedback mechanisms.” [18] In other words, game mechanics are the rules that make one game unique from another. While GW and WoW have similar fantasy environments, they do not implement the same rules, and so are not played the same. A brief generalization of each game’s mechanics as they are relevant to the topic of this paper will be discussed below.

**Guild Wars**

GW is an instanced game. There are two types of instances: explorable and town/outpost. An explorable instance is unique to the player and their party, and disappears when the last player leaves the instance. Players outside of the party have their own explorable instances. Each instance includes an area where quests are carried out with a set of enemies unique to that instance. These areas are limited in size and can support from one to twelve players and/or non-player characters (NPC). A town/outpost is where players will generally socialize and trade with other players from other parties. These areas can hold over a hundred players at once.
GW characters have a permanent primary class and a changeable secondary class. This means that a player can combine the skills of a Warrior with a Monk, and later change this to a Warrior with Elementalist skills. However, since there are over a thousand skills that can be learned across all ten classes, about four hundred of which are available at any one time, one of the restrictions of the game is that only eight skills can be allocated to the skill bar at any given time.

Skills are categorized into different attributes. Attribute points are awarded to a player for each level they gain, up to a maximum level of twenty. There is a maximum of 200 attribute points that a player can be allocated between the attributes, which in turn enhance skills in that attribute category. For example, a Warrior skill called Riposte is affected by the Tactics attribute. Allocating points to Tactics determines how much damage Riposte will cause. There are also special Elite skills that are more powerful than normal skills. Only one Elite skill can be used on a skill bar at any given time.

Skills and attributes can be changed as many times as a player desires. The only drawback is that changes can only be performed inside of a town/outpost. It is possible for attribute points to be added to an attribute in an explorable area when a character has leveled, but reallocating attribute points must take place in a town/outpost.

World of Warcraft

WoW is a persistent game, which means that the entire world is shared by everyone on that same server. Like with GW, there are some areas that are explorable instances, but for the most part, WoW is persistent. Enemies are shared amongst all players and have a respawn time when enemies will be recreated so others can kill them as well. Capital cities provide a location for socializing and trading. Smaller settlements and outposts away from the capital cities also allow for socializing and trading.

WoW characters are single primary classes, but some classes can be "spec’cd", or specialized, differently, such as the Druid. The Druid can be designed to either be a healing druid or a feral damage druid, depending on how talent points are distributed during character development. Much like GW, each character is awarded a talent point per level after hitting level ten. These talent points are used to enhance certain skills where skill enhancements are arranged in "talent trees", i.e. some talents must be acquired before others become available. Talent trees organize the talents that the character can attain. There are no limits to how many skills a character can use at one time, but as a practical matter, a player’s choice of skills is heavily dependent on which talent tree into which they have invested points. For example, a Mage with more talent points in the fire tree will typically specialize in the use of fire magic.

WoW characters can “respec”, or reassign talent points, as many times as they want at the cost of some in-game currency that scales according to how many talent points need to be moved from trees. This service is provided by class trainers who are usually located in capitals, although some are found in certain settlements.

3. BUILDS

For the purposes of this paper, a character build (or just “build”) is defined to be the combination of skills and either attribute points (GW, Figure 3) or talent points in talent trees (WoW, Figure 4). There are other minor factors, such as armor and weapons, that can also
contribute to a build, but they will not be considered here. For this study, skills and attribute/talent points were chosen as a focus because these most impact how a player chooses to meet their goals in the game.

Figure 3. GW attribute and 8-skill bar for a "Splinter Barrage" Ritualist/Ranger character. On the right is the choice to change the secondary profession.

Figure 4. WoW talent tree for a hunter, displaying Beast Mastery, Marksmanship, and Survival trees. The character portrayed here has chosen the Beast Mastery route.
4. DEFINING BUILD THEORY

As a new and still evolving term, "build theory" is currently not well-defined. The author first became aware of this term through its use in casual conversation with a player, who mentioned it while explaining his ambitions in GW. Web searches on this term resulted in only a few relevant sites. These sites were not limited to a particular MMOG however, hinting at a more universal concept. None of these sites defined the term explicitly, leaving it to be inferred from context. However, the contextual usage appeared to be reasonably consistent, reinforcing the idea that this was referring to an emerging common conceptualization. When interviewed, most players were not familiar with the term, "build theory"; but when asked in interviews to provide a definition, players consistently gave similar answers, even between the two games.

Interview Results

Eight players from Guild Wars and eight players from World of Warcraft and two players from both MMOGs were interviewed in person, online chat, or email questionnaire. In each case, a core set of questions was posed, including how long they have played the game, what class they primarily play, if they have heard of build theory and what they think it might mean. A majority of the interviewees were full-time college students and the rest were full-time workers. Most were in their twenties, the rest were older. There was at least one player from each game who knew the game mechanics well and were able to provide significant insight. A full list of interviewees can be seen in the Appendix.

Matt, a GW player, has spent significant time theorizing and testing builds for his Mesmer, Elementalist, and Dervish characters. Outside of the game, Matt is a computer science student who intends to work for the government. Matt is one of the more experienced GW players and is also the person who first mentioned the term, "build theory", to the author. Although he is no longer a regular player, he keeps up with all of the game updates and changes to the skills, which are vital to determining whether a build is still viable or has become outdated.

Benjamin, a WoW player, has spent many hours exploring the game and trying many different approaches while playing through it. Outside of the game, he is an arts student who intends to work in the video game industry as a lead cinematic artist. Benjamin has been playing WoW since the beta release and has seen WoW change and grow into the form it has now. His long time experience has given him in-depth knowledge into the game that is not limited to game mechanics but also includes the lore and environment.

Among the interviewees, Matt and Benjamin, the most experienced players, had relatively technical views of the definition of build theory, as discussed below. Hadley, a GW player, discussed build theory in terms of how it would be used, saying build theory "dictates what kind of character you are going to have; it forces you to plan your character more before you start your new game." Other players used analogies to explain their understanding of build theory. Chris, a GW player, said it was like chess, "using a build's inherent strengths to beat a challenge" and "[prepare you] for what you will face." Since GW is instanced, a lot of preparation must be done before entering an explorable zone. Arielle, a WoW player, likened build theory to building a computer, "You want the best parts for the right job, or in WoW's case, the best skills that complement your style of play and gear." This "style of play" element of build theory is also emphasized in Benjamin and Matt's comments.
Benjamin explained build theory as finding “the best combination of specific talents to optimize what you are trying to achieve. Be it efficient healing, survivability; be it highest damage output possible.” Matt provided a similar explanation, but in the context of GW, “You would create an ideal combination of [skills, items, and weapons] for some effective purpose, that could be farming, some sort of PvP [Player versus Player] sort, and some sort of PvE [Player versus Environment] role, such as nuking, tanking, and interrupt, for example.” Matt goes on to say that “you have to think of these combinations and find out things about how the game works.” It is clear from these comments that the purpose of build theory depends upon the player’s goals in the game.

Interview Analysis

From Matt’s interview, he mentions that there is a synergy between three factors: skills, items, and weapons. Malcom, a GW player in his twenties, goes into more detail about the synergy within skills, “With all the spells you can pick up there are many possible builds, although I try to look for spells that would work well with each other.” From the interviews, it became clear that players look for a combination of skills that work effectively in order to achieve some specific purpose. This goes back to Arielle’s analogy of building computers, choosing the parts that work the best for a particular usage.

Although Matt and Malcom play a different game than Arielle (GW versus WoW), their answers to the question, “What is build theory?” were very similar, implying that build theory is broadly applicable to more than one game. Both games have the common characteristic that the player personalizes and builds up a character, although it is common for players to use builds that others have shared and deemed to be successful in the game. Both GW and WoW are MMOGs, but as Chris suggested with his chess analogy, it is possible to apply build theory to other types of games which are not MMOGs.

4.2.1 Survivability

Another interesting find was that although the responses given by the interviewees were similar, the rationale given was different. Some players responded in terms of survival while others responded in terms of more abstract personal goals. These rationales also correlated to the length of play. Those who had played longer had a definite preferred style of play corresponding to abstract goals, while those who had not played as long were primarily focused on keeping their character alive by any means possible. For example, when Ashley was asked how she chose her skills in GW, she responded with, “Ones that look like they kill fast enough.” Ashley has played the game for less than a year. On the other hand, Benjamin, who has played WoW for over three years, said that, for him, it is more of a style of play, such as emphasizing healing as a goal unto itself.

Five follow-up interviews were conducted with the more experienced players. It was surprising to find that the experienced players reported that their focus when they first started playing these games was not specifically on survival. Benjamin was interested in exploring the world and gaining an “understanding of how the game works with abilities.” When asked about survival, he said that “you always want to stay alive,” but he “never thought of it as [his] main focus.” On the other hand, Matt “had no idea of mechanics of the game” but had “just one goal and that was to get [an elite skill, Illusionary Weaponry]” When asked when he began to think
in terms of survival, it was when he started playing the role of a tank, or a character who keeps
damage focused on himself so others on his team can perform their functions without worrying
about receiving damage. Both of these players said that they did not focus on a single purpose
until after they had played through the game once and had gained a better grasp of how the game
was played. Their responses appear to reflect prior gaming experience before beginning GW or
WoW. Unfortunately, this specific question was not asked during the interviews.

Interview responses from beginning players such as Ashley, who chose skills based on the
“ones that look like they kill fast enough, and the buttons that look pretty,” support the idea that
beginning players spend more time adjusting themselves to the game’s mechanics. Jon, an
experienced GW player, also mentioned in a follow-up interview that when he first started
playing, he “was more focused on developing ways to damage enemies before they could
damage [him]” and provided the rationale that he “felt if [he] stomped out the fire quick enough,
[he] wouldn't get burned.” A common trend in new players appears to be dealing as much
damage as possible to the enemy before they can inflict damage on the player. For new players,
this may simply reflect a normal human survival instinct acting in an unfamiliar setting.

Two additional short interviews were conducted with experienced WoW players. Renee, a
computer science student who has played for almost two years, comes from a text-based
background of Multi-user Dungeons (MUDs) and was encouraged to start playing WoW by a
friend. When Renee first started playing, her initial character was an Undead Warrior, which she
explained as her first choice because “the game seemed really complex, so I wanted something
that didn't seem complicated so I didn't get discouraged.” When asked about survival, she
recalls that she saved money to buy a better sword, but when she looks back on it with her
knowledge of the game now, it was not a very good sword. However, she came to accept dying
a lot while focusing on leveling up and exploring the world. Her main focus currently is on
Player versus Player (PvP), so dying is something she has grown accustomed to. Survivability in
Renee's case is a little different from others, because PvP is a different environment, and Renee
does not seem to mind that she may die often.

Louis, a recent computer science graduate, has played WoW since it was released to the
public. His main goal when he started was to just level up. He admits to not being very good
with choosing the appropriate armor and talents that would have increased his survivability when
he first started, but now he is more conscious of what gear he uses and what he sells or throws
out. Although he would like “to do end game stuff and get some cool looking gear,” he argues
that “it takes too much time and effort” and now just plays with friends by questing through the
game with different characters. He mentions that he became aware of survivability when he first
started raiding, a large group event that requires a lot of coordination between the players, and
that was only after he had reached what was the max then of level 60.

For the experienced players, survivability has different levels of priority. In Renee’s case,
dying is inevitable regardless of what she may do. On the other end of the spectrum, Louis will
determine where to allocate talent points and choose his equipment with the goal of staying alive
as long as possible. Jon is somewhere in the middle and has adopted the mindset of dealing as
much damage as he can, while being well-rounded enough in his skill set to be able to escape or
counter heavy damage with healing abilities. Matt and Benjamin, also in the middle, use their
knowledge of the game, including skills, attribute/talent points, and game environment, to gain
the upper hand.

From these five interviews, it was also common for players to develop specific purposes once
they had already played through the game, or had reached the highest level at least once. Jon
changed his heavy damage mindset only when he “made it to a place where [he] had more skills to choose from [Kaineng City].” Then he “really became a firm believer in self healing strategies.” Kaineng City is a capital city in Guild Wars Pactions where players can purchase a large number of skills. By the time Kaineng City is reached, the character is at or almost at level 20 (the highest level achievable in GW). Benjamin, who was most interested in the lore of WoW and exploring the areas, did not start playing with a specific purpose until he had played through the game and reached level 60 (the highest level achievable in WoW before the expansion).

Matt’s views were similar, but he was more interested in the game mechanics and spent time acquainting himself with the game before he started trying out different builds. Renee, as she found her interest lay in PvP, actually found her purpose “a few months after [she] started...when [her character] was level 39ish.” This occurred when she took her character into Warsong Gulch. What attracted her was “the competitive atmosphere and learning what strengths or weaknesses your character has against another’s.”

4.2.2 Build Origins and Development

It is common for players to make builds on their own using the descriptions provided in the game and going through a process of trial-and-error. This is typical for new players. Ashley, for example, just chose skills that dealt the most damage. Experienced players tend towards a collaborative approach. Keith, an experienced GW player, states, “Now, I admit I go online more. I just Google and type whatever I can find with Guild Wars and a class and see what comes up, or people will link me websites and then I go there.” The collaboration between players is common also in WoW. Louis said that he would “talk to others of his class” to get tips on what equipment to choose.

Another popular place to collaborate with others online is through wikis and forums. For Guild Wars, Matt uses PxXwiki (www.pxwiki.com) to look up builds other players have made and tested. Builds on this wiki are rated by the community on a scale of 0 to 5, where 5 is the best score. Builds with scores lower than 2.5 are subject to deletion after a period of time, as well as builds that have become outdated (no updates have been made to it for over four weeks) or replaced by better builds that perform relatively the same function. Builds are also categorized into PvP and PvP with several subcategories, such as Teams for PvP and Farming for PVE. Builds are not restricted to one subcategory. Another common GW community is Guild Wars Guru (www.guildwarsguru.com) which has forums with many active participants. There is a forum specifically for builds, where players can ask for help on certain builds they want to play (such as a Restoration Ritualist), or they can offer their own builds and request critiques.

World of Warcraft also has community forums, a wiki, and multiple databases where quests, item information (e.g. what enemy drops it, or chance of drop), and profession information are stored. Benjamin and Renee both mentioned using WowHead (www.wowhead.com) to look up builds. Benjamin browses the forums there, while Renee uses it for the talent calculator, which allows a player to input points into a talent tree simulation to get an idea of what talents are available at certain levels if a certain number of points are put into one place versus another. Benjamin also mentions WowWiki, similar to GWwiki, to research aspects of his desired build. Renee also uses the WoWarmory (www.wowarmory.com) to look up builds other players have made. WoWarmory is a large database that provides information on characters above level 10, as well as items that have been found in the game. It is searchable by
character name, guild, and item name. It also has a function that allows players to look up their own characters and look up upgrades for various items and armor parts.

The term “cookie cutter” has been applied to builds that have high success ratings and is so popular that players will copy it completely. In WoW, “twinks” are certain level characters, usually 19 or 29, outfitted with the best equipment for their class for PvP purposes. This is also a cookie cutter build in combination with skills and talent points. The use of twinks is a matter of divided opinion among players. For those who play twinks, such as Renee, they find that “it’s a hell of a lot of fun” and there is a feeling of superiority over others [19]. Benjamin refuses to play twinks, stating that it is a waste of time and resources.

For Benjamin and Matt, builds that have been posted online are more resources from which they can derive ideas from. Benjamin typically has a desired goal in mind before visiting WoWwiki and other resources. Then, he states that, “[I] tweak it to fit what I think would work better as well as to suit my play style,” typically this involves, “taking points from certain talents that do not make sense in my mind and putting them somewhere else.” Matt’s strategy is similar, first having a design, or a sketch of a build, in mind, then using PvPwiki as a pool of information to get ideas. He states, “I take [PvPwiki] as a base and then I do my own testing.” He also states that “usually things will be slightly different from wiki’s but it’s meant to be suited for what I need.” When asked why he does not visit PvPwiki first before making his build, he responded that he prefers “to build on what I need rather than dovetailing my problem to a general build.” In these two cases, the builds that are provided online are customized to the player’s preferences and style of play.

A Consensus Definition of Build Theory

From the information gathered from interviews, the consensus on the general definition of build theory is the process of choosing the combination of skills and attribute/talent points that produce the best desired effect. For novice players, the desired effect may be staying alive for as long as possible. For more experienced players, it could be something more specific, such as being an efficient healer. How this is achieved depends on the game’s mechanics which is unique to each game. Ultimately, it comes down to what a player wants to do and how they want to do it. Then by researching previous builds and/or trial-and-error, a player will have a build customized for his style and preference of play.

5. SCIENTIFIC HABITS OF MIND

There is not much literature on build theory, but the process of build theory can be linked to “scientific habits of mind”. Scientific habits of mind are summarized as problem solving, reasoning, communication, and making connections [20]. Steinkuehler and Chmiel in their paper, Fostering Scientific Habits of Mind in the Context of Online Play [21], have developed a subset of analytic code to assess scientific habits of mind using the World of Warcraft forums as their subject pool. This subset consists of “scientific reasoning”, “model-based reasoning”, and “understanding theory and evidence”.

Scientific discursive practices include “collaborative knowledge construction, building on the ideas of others, and the use of counterarguments” [21]. In the previous section, methods of going about creating builds involved players going to online forums, databases, and wikis. All three of these types of online sites allow players to communicate using a variety of paradigms,
including private peer-to-peer, public peer-to-peer (where others can read peer-to-peer chat), and broadcast mechanisms, such as the ability to leave a comment that everyone else is able to read. Forums are places where users can leave messages and are typically moderated by special admin users. For databases, such as WoWhead, users can leave comments that are then ranked by other users according to their usefulness and relevance. Wikis are editable by the public and typically consist of the publicly viewed front page that has information and a less public page, usually called “Discussion”, linked to the front page that allows users to comment and engage in discussions on the content for that page. Depending on the topic, there may be a lot of discussion or none at all.

As an example, Benjamin and Matt used the information provided at these sites to make their builds. Community sites (e.g. forums, wikis) also offer the ability for people to give back to the community, by allowing them to share what they have found so that others can test it out for validity and viability, and then they in turn can comment on what they think or take it a step further and make it better. More experienced players may have already tried what has been suggested, or know the game’s mechanics well enough, to be able to provide a counterargument on why the build may not work as well as expected.

Model-based reasoning includes “understanding systems, feedback mechanisms among their components, and the usefulness of describing such relationships mathematically” [21]. This applies more to game mechanics and players’ understanding of it. As mentioned in the definition of game mechanics, it also encourages players to explore and understand the rules through feedback mechanisms. A lot of the functions in MMORPGs, such as damage, defense, or chance of X rely on mathematical formulas that are part of the game’s mechanics. This is also known as theorycraft in WoW. Theorycraft is defined as “the attempt to mathematically analyze game mechanics in order to gain a better understanding of the inner workings of the game” [22]. In WoW, there has been extensive research performed by players to determine damage dealt if certain conditions are met, compared to when they are not, and other similar statistics [23]. GW has similar statistics, but since the game mechanics are much simpler and there are less factors to consider, it is also harder to gather data. WoW allows the use of mods, which are small Lua scripts that can perform a variety of tasks in addition to gathering statistical data, such as providing map coordinates as these currently do not exist in the interface. GW lacks this add-on feature, so much statistical data must be gathered by hand. None of the players interviewed made use of theorycraft.

Lastly, applying “understanding theory and evidence” with regards to build theory is difficult. Because the term, build theory, is still relatively new, there is not currently a lot of discussion between players on the topic. The only observations that can be made are when players discuss theoretical builds and why they would or would not work. This does not happen often as players will tend to test their builds right away. When these discussions do occur in forums, however, there will be an exchange where experienced players provide input based on their experiences with certain skills [24]. Their comments may be of a more personal opinion based on their own preferences, but other times, their input may be based on theorycraft [23].

6. CONCLUSION

For this paper, two widely popular MMOGs were selected to develop a general definition of build theory. These games share key characteristics that allowed them to be used to examine build theory within a common conceptual framework. Input from players show that build theory
is widely used within the MMOG community, although only a small fraction are aware of build theory as a formal concept.

Build theory describes a method for character development that allows a player to optimize and customize that development in order to achieve some desired purpose of the player. In the process of developing a definition for build theory, it was discovered that players went through two stages. During the first stage, the player is adjusting to the game and the game's mechanics. In this stage, the player tends to be focused on survival. Transition to the second stage occurs when the player has gotten used to the game and how it works, usually after playing through the game once or reaching the level cap. Players in the second stage will have a more defined purpose than just surviving, including finding the most efficient way to heal, tank, or deal damage. During this stage, players tend to develop a distinct personal style of play, typically research builds online, and then adjust them to fit that style.

Online communities for MMOGs typically provide places where players can collaborate on developing characters. Although some players prefer to make builds on their own, many players visit the communities to get ideas, input, or feedback on builds. This community interaction is consistent with the concept of scientific habits of mind where players engage primarily in scientific discursive practices and model-based reasoning. Players practice "understanding theory and evidence", even though many are unaware of the existence of build theory. Because players are unaware of the formal theory or how they are practicing it, it is difficult to explicitly analyze their implementation. Build theory is embedded in game play and is not commonly abstracted into its own conceptualization. Formal study of build theory would increase its sophistication by delving deeper into the subject, e.g. by studying additional games and their mechanics, and their relationship to players' habits and styles of play.

7. FUTURE RESEARCH

One possible route for future research involves deeper study of the game mechanics to better understand the relationship between configurable equipment (e.g. armor, weapons) and skills. More specifically, configurable modifications available for some armor and weapons and how they affect skills, e.g. modifications that increase attack/casting rate interact with other character skills that depend on attack/casting rate. Thus, modifications to equipment may be equivalent to developing character attributes within the framework of build theory. This would explore how build theory could be extended to indirect character attributes within any given MMOG.

An orthogonal line of inquiry would be to extend the current study to additional MMOGs, or even possibly non-MMOG Role Playing Games to explore the breadth of applicability of build theory.


14
<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age</th>
<th>Occupation</th>
<th>Game</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chris</td>
<td>Working</td>
<td>Self-employed</td>
<td>GW</td>
<td>&quot;[Build theory is] like chess, using a build's inherent strengths to beat a challenge. Preparing for what you will face&quot;</td>
</tr>
<tr>
<td>Eddie</td>
<td>Working</td>
<td>Employed</td>
<td>GW</td>
<td>&quot;Try to pick support skills if I know I'm going to be in a group and I'll even try to manage my spec according to the group.&quot;</td>
</tr>
<tr>
<td>Greg</td>
<td>College</td>
<td>Student</td>
<td>GW</td>
<td>&quot;Build theory is a great way that will help people understand how/what they are supposed to do in the game.&quot;</td>
</tr>
<tr>
<td>Hadley</td>
<td>College</td>
<td>Student</td>
<td>GW</td>
<td>&quot;[Build theory] dictates what kind of character you are going to have, it forces you to plan your character more before you start your new game.&quot;</td>
</tr>
<tr>
<td>Jan</td>
<td>Working</td>
<td>Employed</td>
<td>GW</td>
<td>&quot;[Build theory is] the idea of a use of set skills and classes. It depends on what role you want your character to play. You identify your objective and find skills and class that are best suited to that objective, however sometimes it can be done backwards. You can discover an awesome skill and try to make a build based upon the use of one skill.&quot;</td>
</tr>
<tr>
<td>Keith</td>
<td>College</td>
<td>Student</td>
<td>GW</td>
<td>&quot;I just Google and type whatever I can find with Guild Wars and a class and see what comes up, or people will link me websites and then I go there.&quot;</td>
</tr>
<tr>
<td>Malcom</td>
<td>Working</td>
<td>Employed</td>
<td>GW</td>
<td>&quot;With all the spells you can pick up there are many possible builds although I try to look for spells that would work well with each other... something that would increase damage of another spell, something that may make your opponent weak, or something that will even give you more mana.&quot;</td>
</tr>
<tr>
<td>Matt</td>
<td>College</td>
<td>Student</td>
<td>GW</td>
<td>&quot;Build is a set of skills and items and weapons for a particular character to use and you'll have some sort of synergy between them.&quot;</td>
</tr>
<tr>
<td>Ashley</td>
<td>College</td>
<td>Student</td>
<td>GW &amp; WoW</td>
<td>&quot;I think that certain characters or classes that you pick have its own specific skill sets that maximize its abilities, it would be in the build theory. Ones that look like they kill fast enough, and the buttons that look pretty.&quot;</td>
</tr>
<tr>
<td>Jarred</td>
<td>College</td>
<td>Student</td>
<td>GW &amp; WoW</td>
<td>&quot;Basically [build theory] is the idea behind each build and how it works to meet its goal.&quot;</td>
</tr>
<tr>
<td>Arielle</td>
<td>College</td>
<td>Student</td>
<td>WoW</td>
<td>&quot;You want the best parts for the right job, or in WoW's case, the best skills that complement your style of play and gear.&quot;</td>
</tr>
<tr>
<td>Benjamin</td>
<td>College</td>
<td>Student</td>
<td>WoW</td>
<td>&quot;[Build theory is finding] the best&quot;</td>
</tr>
<tr>
<td>Name</td>
<td>Education</td>
<td>Employment</td>
<td>Game</td>
<td>Statement</td>
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<tr>
<td>Chad</td>
<td>Working</td>
<td>Employed</td>
<td>WoW</td>
<td>&quot;It's very important to do some research on a build because it enables a player to maximize his/her usefulness in a group setting especially.&quot;</td>
</tr>
<tr>
<td>Chantel</td>
<td>College</td>
<td>Student</td>
<td>WoW</td>
<td>&quot;I would admit that some builds are ridiculous and don't have a purpose and people make fun of you for doing it.&quot;</td>
</tr>
<tr>
<td>Neil</td>
<td>College</td>
<td>Student</td>
<td>WoW</td>
<td>&quot;Pick what your talents are, I guess, isn't that what build theory is?&quot;</td>
</tr>
<tr>
<td>Louis</td>
<td>Working</td>
<td>Employed</td>
<td>WoW</td>
<td>&quot;People. I find a good priest and ask them. Why do the research when someone has already done it?&quot;</td>
</tr>
<tr>
<td>Ralph</td>
<td>College</td>
<td>Student</td>
<td>WoW</td>
<td>&quot;When you start going to PvP, you want to, for a mage, stay alive. So you want to pick the talents that will give you the most survival chance, but at the same time dealing enough damage to kill the enemy.&quot;</td>
</tr>
<tr>
<td>Renee</td>
<td>College</td>
<td>Student</td>
<td>WoW</td>
<td>&quot;I remember saving up to buy this (in retrospect very crappy) sword from a vendor since it seemed better than my current sword.&quot;</td>
</tr>
<tr>
<td>Reuben</td>
<td>Working</td>
<td>Employed</td>
<td>WoW</td>
<td>&quot;I have heard of them, and used the theory to try to maximize the damage and effectiveness of my character based on my current style of play and items that were equipped at the time.&quot;</td>
</tr>
<tr>
<td>Sybil</td>
<td>Working</td>
<td>Employed</td>
<td>WoW</td>
<td>&quot;When I heard [build theory], I thought of it as the ways to distribute your character's ability points. Your character's performance and usefulness in the game is based on this.&quot;</td>
</tr>
</tbody>
</table>