Enter the Arena: *Magic: The Gathering Arena* Software Evaluation

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Upkeep

Magic: The Gathering Arena (Wizards Digital Game Studio 2019) is *Magic: The Gathering*'s (Garfield 1993) latest digital incarnation and a new entrant into the world of digital trading card games (TCGs). The goals that Wizards of the Coast (WOTC) have stated for its design and the experience it aims to provide are to "create a game that can evolve", which is achieved through its flexible Game Rules Engine, "to create the deepest, richest digital card game on the market", and "to create a version of *Magic* that's as much fun to watch as it is to play" (Steefel 2017). In this essay, I shall explore *Arena*'s efforts to meet the last two, and how they impact the user experience.

"The deepest, richest digital card game on the market"

A 2019 study (Churchill, Biderman and Herrick) claimed *Magic* "is the most computationally complex real-world game know in the literature", potentially being "as hard as it is possible for a real-world game to be" in terms of its strategic depth and knowing which play is the best (p. 7). *Arena* has featured every set released during its public existence (Gamepedia 2019a), replicating every required rule and interaction, even those that other digital TCGs have omitted to improve game flow (Stanton 2013, Barrett 2017). To help players navigate that depth, *Arena* guides players through a tutorial, communicates cards' affordances clearly, and uses button text and colour to guide players.

When a player begins with *Arena*, they must play through a tutorial before being given access to Player-versus-Player gameplay. They complete five matches that introduce *Magic*'s basic concepts and game mechanics, such as the colour pie, mana system (fig. 1), card types, etc. (Fujosovich 2018). It presents only the information the player needs in order to learn the current aspect so as not to overwhelm them, acclimatising them to each aspect before moving onto the next (Gerhardt-Powals 1996, p. 192, Rosewater 2018). To acclimatise players more fully, *Arena* has them play through game states where each aspect can be applied, with the feedback from the game guiding players' construction of a conceptual model of *Magic* (Norman 2013, p. 72). As the tutorial builds up players' *Magic* literacy, they begin perceiving more of its strategic depth, spending less time in the back stage of navigating comprehension complexity (e.g. trying to remember rules, how a turn progresses), and more time in the front stage of board and strategic complexity (e.g. needing to take out that creature, watching for that counterspell) (Rosewater 2011, 2014, Conway 2019).

Figure 1: Arena's tutorial teaching a player how the mana system works.

Once in a full game of *Magic*, players' main source of assistance is how *Arena* conveys what cards afford beyond what's possible in tabletop *Magic* (Thibault 2019). Cards' mana costs are listed above their top right corner (fig. 2) ra-

Figure 2: the positioning of cards' mana costs while in the player's hand.

Figure 3: an Incubation Druid *on the battlefield, with icons showing that it has a tap ability and the Adapt ability.*

ther than within the top right of the frame like a real magic card, where they would be obscured by other cards in the players hand due to their layout. This logical arrangement automates the unwanted workload of mousing over a card to check its mana cost (Gerhardt-Powals p. 193); clearly and obviously displaying it instead helps players feel less uncertain about what they should do, reducing their decision time and errors. Cards' stats and abilities are displayed or removed to match changes afforded by other cards, only displaying current attributes. Abilities are represented not just by keywords and reminder text, but icons matching cards' abilities (e.g. tap symbol for tap abilities (fig. 3), wings for flying, crown motif around the name if it's legendary, etc.) (Clay 2018). Each icon was chosen because of its likeness and natural mapping to the ability it represents (Burks 1949, p. 674, Norman 2013, p. 115). They allow players to glance at a card, see the icons and know what abilities it currently has. This enhances cards' transparency, ensuring their affordances are perceptible and real rather than hidden or false (McLuhan 1977, pp. 175, 177-178, Gaver 1991, p. 80, Clark 2003, p. 37). This in turn reduces the interpretive labour required of players (Graeber 2012, pp. 117-118) and any anxiety or boredom stemming from obstinate design getting in the player's way (Heidegger 2001, pp. 103-104), affording them the cognitive load and comfortable, relaxed frame of mind with which to strategize against and skilfully interact with their opponent.

Another assistive feature – this time in *Arena*'s in-game UI – are the attributes of the "Next" buttons it provides for progressing the turn phase, confirming attackers and blockers, submitting a selection, etc. (fig. 4). The buttons change their text according to the player's currently available options (e.g. "Next" with "To Combat" underneath them during the pre-combat main phase, "Opponent's Turn" during the opponent's turn and they're thinking, or "Pass" when given the option to respond to an opponent's play (Thibault 2019). This helps render the game's state visible and removes the mental load of having to recall if particular

Figure 4: "Next" buttons prompting the player to either attack with all creatures or with none.

options are currently available (Joyce 2019), minimising confusion, relaxing players, and helping them feel competent and aware of their options. The buttons also change colours according to the option they currently afford, with orange indicating "Yes" or "Continue", blue suggesting "No" or an "Are you

Figure 5: a sample mythic rare set symbol.

sure?" "Yes, I am" interaction, and a dull, transparent grey indicating the player cannot act at that time. This orange-blue colour scheme points towards and resembles the fiery orange set symbols on mythic rare cards (fig. 5), leaning on that indexical (pointing towards) iconography (resembling what it represents) (Burks 1949, p. 674) and levereging players' desire to open mythic rare cards in booster packs to make the orange button excite them and put them in a "Yes, let's go!" frame of mind when they click that button. The blue buttons leverage this and the fact that blue is orange's opposite colour to turn it into an anti-index or anti-icon and invoke an opposite mindset of "No, I'd rather not" when they are instead pressed. This system-real world match is maintained throughout *Arena*'s in-game UI, establishing and then maintaining player expectations to again minimise confusion and friction, and maximise fluid, literate use of the "Next" buttons.

I could go on for pages about *Arena*'s many assistive, informative features and details, from the greying out of tapped cards to the gold links between attacking and blocking creatures. Altogether, however, these features reduce the cognitive load and interpretive labour (Graeber 2012, pp. 117-118) required to remember and understand how cards work and what players can do. This allows

players to spend less time in the back stage of remembering how to play, and more time in the front stage of actually playing (Conway 2019) and enjoying "the deepest, richest digital card game on the market" (Steefel 2017).

"As much fun to watch as it is to play"

Hearthstone (Blizzard Entertainment 2014) features critically praised tactile, exciting visual effects (MMO-Champion 2013, Stanton 2013, Stuart 2015, Hearthstone Esports 2019) that helped establish

its digital collectible card game primacy. *Arena*'s predecessors, the *Duels of the Planeswalkers* series (Stainless Games 2009, 2011, 2012, 2013, 2014) and *Magic Duels* (2015), lacked that energy and tactility (ZeroBaseZone 2011, Katana 2013, Lukeboe 2014, LegenVD 2017). Cards and visual effects moved too smoothly and slowly, feeling more like *Ratchet & Clank* taxis (Insomniac Games 2002) than exciting spells. Remedying this, *Arena* provides players with splashy graphics and subtle tactile effects.

Many of *Arena*'s visual effects are played when a player takes a particular action (Thibault 2019). One prominent group of these are effects relating to the casting of powerful cards, such as mythic rare creatures emerging from their cards, or vortexes of energy matching planeswalkers' colours that manifest around them (fig. 6). Another is conflict-oriented effects, such as creature cards smashing into players (fig. 7), damage and destruction animations depicting cards' effects (e.g. a fire ball for a damage spell, slashes for knife-wielding creatures, etc.), and creatures disintegrating and avatars exploding when killed. At the operative level of "I-as-player" (Conway and Trevillian 2015), these animations provide feedback regarding players' actions, depicting

Figure 6: frames from the casting animation of Chandra, Awakened Inferno.

the action they selected taking effect and its outcome (Norman 2013, p. 15). This reassures players that they have the agency to impact the game, and that are employing that agency, that the effect they're having on the game is under their control (p. 52). These animations also project diegetic elements down into the operative key, enhancing (McLuhan 1977, pp. 175, 178-179) the visual spectacle to excite players and spectators, enticing them to cross the operative and character keys' boundary and view the players as powerful, magical combatants (Conway and Trevillian 2015).

Figure 7: a Torbran, Thane of Red Fell *leaping across the battlefield attack a player.*

Subtler effects *Arena* affords includes its battlefields (which replicate *Magic*'s many worlds) playing setting-appropriate background animations (Thibault 2019), with the sidelines occupiable by unlockable pets (WOTC 2019a, 2019b). These pets and background animations afford players something to do while thinking or waiting, to provoke their curiosity and relieve stress (Perez 2019), resulting in *Arena*'s gameplay feeling cooler during those moments of downtime. This can counterbalance the hotter bursts of excitement and pleasure
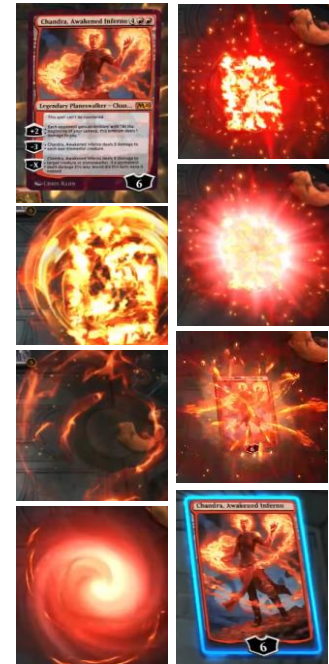

Figure 8: a War of the Spark (WOTC 2019c) *battlefield, with Ravnica's cityscape in the background, a planeswalker spark flying overhead. The opponent's pet fox sleeps in the right alcove.*

elicited by splashy animations (Conway and Ouellette 2019, pp. 3, 9, 10) and enable players to tailor the emotional experience they get from *Arena*.

Figure 9: a freshly-cast Legion Warboss *kicking up dust.*

Another subtle set of effects *Arena* affords are those that replicate tabletop *Magic* cards' physicality. When you draw a card, it flips face up, moves to the right of the battlefield, pausing as if being examined momentarily, before appending to the player's hand. Hands can be rearranged, wobbling slightly when clicked and dragged. Cast cards move to the right of the battlefield, pause momentarily, and drop onto the battlefield with a visible, audible thud, kicking up dust (fig. 9). When scrolling through a graveyard, peripheral cards get bunched up behind visible cards, the same as when players examine real graveyards' contents (fig. 10). These effects retrieve the physicality that *Arena*'s predecessors

Figure 20: graveyard cards bunching up where the player's hands would be as they sift through them at the behest of Deliver Unto Evil*.*

lacked (McLuhan 1977, pp. 175, 178-179), allowing *Arena* to lean on it and the familiar iconic imagery of tabletop *Magic* (Burks 1949, p. 674) to further reinforcing the metaphor of the playing card to aid player comprehension of *Arena*'s digital cards and gameplay (Gerhardt-Powals 1996, pp. 192-193). This helps lead to ready-to-hand use of *Arena*'s cards (Heidegger 2001, pp. 98), with players not noticing they're merely moving pixels on a screen, instead focusing on the familiar action of using cards, digital or otherwise, in order to play *Magic*.

End Step

WOTC seeks to make *Arena* "a version of *Magic* that's as much fun to watch as it is to play", and "the deepest, richest digital card game on the market" (Steefel 2017). *Arena*'s tutorial onboards beginners into "the most computationally complex real-world game" (Churchill, Biderman and Herrick 2019), effectively graduating them from wondering how to play to playing to win. Its cards display their affordances to players clearly and efficiently, while its "Next" buttons clearly convey what actions players can take through adaptive text and appropriate colouration. After the lacking visuals of its predecessors, *Arena* features spectacular animations that excite and inform, backgrounds and pets that entrance, and tactile effects that make *Magic* players feel right at home. It is as exciting to watch as it is to play, and is certainly one of if not *the* best digital card game on the market.

Glossary

Affordance: the relationship between the properties of an object and the capabilities of a person that determine how it could be used. For example, a chair affords ("is for") sitting on, a pen affords writing, etc. (Norman 2013, p. 11). Affordances can be grouped into four categories (Gaver 1991, p. 80):

- **Perceptible Affordances**: where an object affords something and that affordance is perceptible.
- **Hidden Affordances**: where an object affords something but that affordance is not perceptible.
- **False Affordances**: where an object doesn't afford something but it looks like it does.
- **Correct Rejections**: where an object doesn't afford something and that lack of affordance is perceptible.

Board Complexity: complexity regarding the board state. Can the player understand how each card might interact with each other card (Rosewater 2011)?

Comprehension Complexity: complexity regarding players understanding what a card does. Can they read the card and know how it works in the game (Rosewater 2011)?

Conceptual Model: a user's conception of a system or object that they have constructed in their mind. The better a conceptual model, the more understanding and control the user feels regarding the system or object (Norman 2013, p. 72).

Cool Media: media that are "low definition," where "so little is given and so much has to be filled in by the [user]", making them "high in participation or completion by the audience" (McLuhan 2001, pp. 22-23). "Cool media tend towards shifts in mood, subtler and longer lasting shifts in one's sense of attunement; anxiety, fascination, pensiveness and boredom" (Conway and Ouellette 2019, p. 3).

Hot Media: media that "extends one single sense in "high definition." High definition is the state of being well filled with data . . . [H]ot media do not leave so much to be filled in or completed by the audience", making them "low in participation" (McLuhan 2001, pp. 22-23). Hot games "tend towards bursts of intense emotion . . . in response to the psychosomatic pressure instigated through . . . features such as explicit win/lose conditions, time-sensitive mechanics and tight cycles of interaction" (Conway and Ouellette 2019, p. 3).

Interpretive Labour: work done to accurately interpret information, particularly in relation to who that burden falls to (Graeber 2012, pp. 117-118).

Keys: modes of thinking about oneself as one engages with a game or other media (Conway 2019). They include:
- **The Social Key**: "I, John-the-friend, am playing this game on my couch with my friends."
- **The Operative Key**: "I, John-the-player, am collecting points to level up my avatar."
- **The Character Key**: "I, Master Chief-the-character, have to escape these zombie-aliens."

Natural Mapping: generally, where the relationship between the controls and the object to be controlled is obvious (Norman 2013, p. 115). For trading card games, where the relationship between a card's concept and function is obvious.

Obstinate: equipment that is not missing or unusable, but that stands in the way of the task one tries to achieve with it (Heidegger 2001, pp. 103-104).

Present-at-hand (vorhanden): an object (i.e. not equipment) that we are aware of as an abstract entity, and that we become mindful of it as the object of our activity, is considered present-at-hand (Heidegger 2001, pp. 103, 121), in contrast to ready-to-hand.

Ready-to-hand (zuhanden): equipment that is taken up and incorporated into one's bodily schema is ready-to-hand (rather than present-at-hand), withdrawing from the user's immediate concern as they act through the equipment rather than upon it (Heidegger 2001, p. 98).

Strategic Complexity: complexity regarding how the player can maximally use their cards to achieve their goals. Can the player maximise the usefulness of each card they have (Rosewater 2011)?

Sign: something that represents or signifies an object to an interpreter (Burks 1949, p. 673). Signs include (p. 674):

- **Icons**: signs that resemble what they represent (e.g. a hat icon that looks like a hat).
- **Symbols**: signs that don't resemble what they represent (e.g. the word "hat").
- **Indexes**: signs that point to or imply something (e.g. the word "they" is an index that refers to something defined before its usage in a written piece; just above, "they" is used point to the concept of icons, and then to symbols).

Stage: the "distance" between a player's thoughts and actions, and the content (social interaction / gameplay / narrative) of the key they are engaging with the game from (Conway 2019):

- **Front Stage**: "I am moving my avatar", "I am firing on the enemy", "I am scoring a goal".
- **Back Stage**: "I am setting up the game console", "I am configuring the game's settings", "I am researching this NPC's stats".

Transparent Technologies: technologies that are "so well fitted to, and integrated with, our own lives, biological capacities, and projects as to become . . . almost invisible in use" (Clark 2003, p. 37).

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Images

All images are screenshots captured from Thibault 2019 except fig. 1 and fig. 5, which are screenshots captured from Fujosovich 2018 and Gamepedia 2019b respectively.

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