Playing with Leadership and Expertise: Military Tropes and Teamwork in an ARG

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ABSTRACT
Ad-hoc virtual teams often lack tools to formalize leadership and structure collaboration, yet they are often successful. How does this happen? We argue that the emergence of leadership and the development of expertise occurs in the process of taking action and in direct response to a lack of structure. Using a twinned set of eight modality sliders, we examine the interactions of fourteen players in an alternate reality game. We find that players adopted military language and culture to structure and arrange their play. We determine that it is critical to account for the context of play across these modalities in order to design appropriately for effective in-game virtual organizing.

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Alternate reality games, computer-supported cooperative work, expertise, leadership, team work, qualitative research

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INTRODUCTION
The player looks around cautiously, noting the positions of guards at the door, non-players massing near the slot machines, a waitress circulating with drink orders. Spotting the bank of payphones across the room, she checks her watch. 17:35. She is late and she knows it, but the wrong information provided to her by a teammate was out of her control. Despite the setback, can she get this axon today and help her team advance? She darts across the room, and places her hand on the phone just as it rings. She jumps, nerves jangled, then takes a deep breath and picks up the receiver... “Hello?...”

This could be a cut scene from any number of video games. In fact, it is from the physical world – one player’s interaction in an alternate reality game (ARG). ARGs operate at the liminal juncture of the global online world of the Web and the local offline worlds of cafes, casinos, zoos, museums and homes. Set in a fictional world overlaid onto the actual one, ARG gameplay is the result of ongoing co-construction between players and designers. All ARGs are characterized by collective storytelling and group sensemaking activities. ARGs require players to work collectively to solve tasks in order to advance the game’s storyline [17,18].

ARGs are play systems that form a part of the ludological culture of today. “Ludology” is the study of the logic and practices of play; a contested term that is synthesized from the work of three prominent play theorists [4,14,22]. Drawing from the Latin term ludus meant as games, fun or play, the intent of understanding the logic of ludus is to reveal the purposeful, instrumental and/or externally directed play of (primarily) adults. Therefore, “ludological culture” is a term invoked in [10] to describe the penetration of a playful mindset into everyday life, increasingly as a result of the popularity of videogames on consoles, computers and smartphones. Ludological elements are now appearing as part of advertising, public politicking and public relations. As such, designing for ludological systems requires a specific attention to the interactive, contextual, and fluid nature of play in practice.

One of the most successful ARGs is I Love Bees (ILB). Developed by 42 Entertainment to promote Microsoft’s first-person shooter game, Halo 2, ILB required the collective intelligence of its players to solve intricate puzzles that extended across the physical and online world. Given that there was no game-provided place to converge or tools for collaboration, players had to self-organize into teams to develop creative solutions and assemble their own infrastructure. How did they do this? What team dynamics emerged? What were the markers of leadership and expertise? We address these questions in this study, focusing in particular on the latter.

APPROACH & METHODS
This paper is an analytical report on project work from a larger study examining the practice of collective problem-solving. Using the ARG ILB as an exemplar, the larger project is concerned with how voluntary virtual organizations (VVOs) collaborate in order to collectively solve complex problems. VVOs depend on far-flung volunteers, negotiation of group dynamics, on-going problem definition and problem resolution. We see ARGs as a form of VVO, and we take them to be a prime site for examining collective complex problem solving.

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ILB was one of the earlier ARGs and it was influential at setting the paradigm for future ARG design. Mystery and intrigue are central to ILB play, and both the draw and the frustration of the game was its lack of designed tools for coordination, collaboration and teaming. Teams were formed ad-hoc, often around geographical regions, in order to maximize a key game challenge: axon hunting. This involved an ongoing series of challenge/response questions posed to players at a set of coded GPS coordinates. Early in the game, players correctly determined that these represented the latitude and longitude of payphones. These were referred to in game mythology as “axons”. At a predefined time, the payphones would ring. If players answered the proper phone at the right time they would receive a question. If answered correctly, an axon would be activated, unlocking clues in the form of short sound clips – puzzle pieces that, when correctly assembled, revealed the next chapter in the unfolding story of the game.

In the absence of an official site to coordinate this teamed axon hunting, players used the ARG fansite, Unfiction.com. It hosted the Haunted Apiary message board, which served as the primary communication hub for ILB. This hub grew to contain more than 54,000 posts by more than 2,700 players. Over the four months of ILB gameplay, players dedicated one of the Haunted Apiary forums to the task of coordinating the ILB axon hunt. This forum conversation was often threaded by geographic region, as specific as a city (e.g., Portland) or as general as a state (e.g., Washington).

Using a grounded theory approach, we investigated axon hunt coordination forum threads in order to gain insight into aspects of virtual teaming and coordination. In our inductive coding process, we saw the emergence of leadership and expertise, as players went about coordinating their efforts around a similar task. Delving into this phenomenon deeper, and following the assertion of [23] that the most active forum posters are those who display leadership and expertise indicators, we selected a subset of fourteen players from the axon coordination threads who had contributed the largest number of postings (N=4705) in their geographic region. They were responsible for more than twenty percent of the forum post activity around axon hunting, and they also accounted for just over nine percent of the overall forum posting activity on the Haunted Apiary generally.

During a second coding pass by two researchers, we realized that the forum posts of our fourteen player subset constructed a set of stories of players’ approaches, processes, difficulties and successes when read in their full discursive theme. These stories aligned nicely with the notion of “war stories” – a qualitative data collection and analytical technique that provide “handles” into the data that bring to life specific struggles and accomplishments of a study’s participants [15]. In research accounts, war stories are told in such a way that informants are placed in central positions as protagonists. The storytelling inherent in the war story reporting method affords the researcher access to both participants’ internal states, as well as any external environmental influences on participants. We noted that axon hunting forum post threads often held markers of war stories, given the way players shared personal hopes, frustrations and desires in forum posts around what transpired during their axon hunting activity.

With the war stories approach in mind, we coded forum posts across player and team narratives. Following case study methodology of [27] and adapted by [31], we assembled fourteen illustrative and exemplary case studies that tell the story of the three prevalent themes of interest: militarization, leadership and expertise. Through our cases, we are able to identify and present rich descriptive accounts of player actions, perceptions and struggles around information seeking, information management and ad-hoc teamwork within the ILB ARG. This approach is consistent with qualitative analytical approaches on unstructured datasets as described by [11], and as exemplified in [19].

From this inductive approach to analysis, we created our research questions for this paper:

1. Can discursive streams from ILB forums provide sufficient detail to be read as “war stories” that illustrate the action of the game?
2. What do these war stories tell us about ad-hoc teamwork, community leadership and group expertise?
3. What design recommendations can be derived from the loosely knit ludological culture of ILB?

BACKGROUND

We consider how people work together within and across geographies to solve complex problems, as part of an ARG team. Consequently, we draw on literature from the fields of qualitative research methods, game studies, and CSCW. With our research goals in mind, we examined the virtual coordination and ad-hoc teaming characteristics identified in the CSCW literature on editing in Wikipedia [32], open-source software development [9], community crisis response [20] and software maintenance [15]. The latter researchers identified leaders, gatekeepers and followers as three types of participants in collaborative information management, and these types were influential in our inductive coding to help identify markers of participation.

An ARG is a ludic digital environment in which people learn things that are generalizable to everyday living [12,17]. To address the question of what sort of collaborative play happens in ARGs, we consulted work that articulates the nature of play and playfulness generally [4,14], as well as within digital games [5,6,29], digital worlds [8] and gamified spaces [3,10].

Leadership and expertise indicators in our data set were important for this paper. We drew from research work that looked at these generally [2,33] and specifically, both
within digital games [5,6,13,16,17,24,25,28], and in online forums [23,33].

DISCOVERIES & ANALYSIS

Overview of Key Discoveries
There were four categories of discoveries in our project:

1. the self-organization of players into teams within geographical regions, and their management of the axon hunting tasks within those teams
2. the militarization of play, based on players’ use of military tropes, language and organizational ideas
3. the demonstration of expertise and leadership modalities, drawn from communicative distinctions between players as they evolved from privates into lieutenants and generals
4. the design implications of providing an open unstructured environment for task management and teamwork across geographies

Self-Organization, Teaming & Tasking
Players volunteered for tasks. In the early stages of the game, volunteering was often influenced by location and time of task, rather than strategic thinking, with players selecting axons that were close to home, work or school. In many cases, players volunteered for the same axon hunting task each week, claiming responsibility for a specific axon location.

Through our case studies, we note that as the game progressed, players started to identify patterns and to suggest strategies that would maximize their efforts:

“I’m thinking I should still concentrate on Union Station, only because there are so many axons in one place at one time (and optical.wav will depend on it). But my priorities will change if getting the low hanging fruit means activating a sound file” (C12)

Due to the voluntary nature of participation in the game, conditional volunteering behaviour was frequently observed:

“If I can take an early dinner on Tues, I’ll go on down to help you cover the phones.” (C8).

In the event players were unable to attend to their weekly tasks, they often posted their conflict on the discussion forum to make other players aware and to assist with coordination efforts:

“I wish I could go to that one, just because I have the most time invested in it... and because Po Folks has great friend green tomatoes! [sic] But I’m working” (C8).

Once tasks were claimed, the act of performing a task, particularly in the initial stages of the game, was an iterative process in which players scoped out a location, narrowed down perspective payphones, tested the payphones to ensure they were functional, and then waited for the expected call. Following completion of a task, players would post their experiences in situation reports on the discussion threads, providing documentation for future task coordination:

“Well, it wasn’t the three phones on the southwestern end of the first floor of the Glendale Galleria, between JC Penney and Zales. At least, I sure hope it wasn’t. The one on the left did not ring, and the one in the middle -- which accepts incoming calls but doesn’t ring audibly -- still had a dial tone at 19:13:30. The one on the right -- which accepted incoming calls on Tuesday even though it didn’t ring audibly -- was busted. It would not connect to incoming calls today, and didn’t even have a dial tone” (C13).

The iterative, trial-and-error nature of the game meant that players often failed tasks on their first few attempts. In areas with vast numbers of geographically dispersed payphones, this failure was often the result of inadequate coverage, making it difficult to eliminate incorrect payphones:

“No dice at Caesar’s (really hard to canvas an entire casino the size of Caesar’s by yourself... Anybody else have any luck?) [...] ah well... the quest continues” (C9).

Players also faced issues when phones were in use. An occupied phone meant that players were unable to test the phone during a scouting expedition or to confirm if it would ring during the scheduled time:

“I tried the Media City Center axon (i_hate_you) three times last week. I can verify that the group of three pay phones on the third floor at the far back end of the mall -- that is, not directly adjacent to the Magnolia entrance -- are not the ones we want. Other than that, I kept running into people who wouldn't get off the phones, so I have no idea whether we want the ones on the first floor or the ones on the third floor” (C13).

Traffic also posed a problem for players. C14 reported such issues impacting her ability to reach a location in time:

“I also discovered it's impossible to make it from the Gallery of Art to the National Building Museum on foot in 8 minutes (traffic sucks, even for pedestrians). I missed the 10:23 call there by about a minute and a half” (C12).

Unless players chose to abandon an axon, the process of trial-and-error usually lead to eventual success, especially in instances where situation reports were provided. Keeping the lines of communication open between players via the discussion forum appears to have contributed to greater instances of success. Once an axon task was successfully completed, players would post a description of the task location in order to assist other players in locating the axon in the future. In some cases, players also posted a tally of all successfully completed tasks either for the day or
for the week, effectively creating a documentation trail of all tasks completed for a specific time period.

Given that ILB did not provide players with guidance or infrastructure for completing game tasks, players assembled their own strategies and tool sets [32]. These tools were used to document locations, report incomplete tasks, and to provide players with general information on how to perform a task. C12 created a status website to document both location information and completed axon status for his Washington, DC team. Supplementing this site, C14 managed a spreadsheet, which outlined weekly status information on the completed and outstanding axons.

**Militarization of Play**

Both our master data set and our case study data subset bears out the ‘militarization of society’ thesis, which argues that military culture has inflected everyday North American life in the post-9/11 Homeland Security era. In particular, evidence exists that suggests the use of military language has intensified post-9/11, and is visible in many of the entertainment artifacts of the early 21st century, from movies to television to video games [7].

Many of the ILB players tended to adopt military language, cultural tropes and organizational concepts to understand and to describe their ILB play. This is perhaps due to the fact that Halo is a militaristic science fiction first person shooter game, and as such military culture is part of the game mythology. Players spoke of organizing their groups into ‘armies’, “platoons” and “companies. They advocated the appointment or promotion of certain teammates to the ‘rank’ of ‘general’ or ‘colonel’. Their speech was peppered with terms like “nav com” and “stat”. C5 exclaimed that it would be “totally cool” if they could name their main group a “company” with subgroups called “squads” or “armies”. C2 spoke of naming their group the army of their city, and she enthusiastically discussed a possible game task in which each team was supposed to take a picture of key team members saluting in front of an axon. C3 congratulated a teammate on their promotion to Lieutenant and also advocated naming their team a “company”. C4 spent time educating his team on the proper use of military jargon, going so far as to link to an About.com glossary page on American military language.

Given players’ preferences towards military tropes, we have chosen to adopt the same US military ranking system identified by C4 to tag the leaders, gatekeepers and followers in our case studies. It is true that the militarized language and rank assignments players used to structure their play, and which we have extended to structure our discussion, is not fully synchronous with that of actual militaries. However, we see the practice of voluntary militarization of play to be a finding of note. We suggest that the ludological structuring of teamwork and tasking around military tropes in gamified worlds warrants future research.

**Leadership & Expertise Frameworks**

In relation to leadership, we distinguish between the leaders of a group and the markers of leadership possibly present in individuals. We also distinguish between traditional organization ideas of leadership typically studied and discussed in organization literature, and the under-defined and emergent style of leadership found in online spaces such as ARGs. There are aspects of leadership visible in the ludic digital environments of ARGs that are not well-addressed in existing work around leadership in online spaces. The first is the lack of any requirement to formally identify, designate and formalize a leadership structure within ad-hoc teams. Outside of commercial massively multiplayer gameworlds (MMOGs) such as World of Warcraft with its guild system, leadership in ARGs is an informal, unacknowledged yet crucial part of play. Leaders self-designate themselves through their play style, but rarely do they call out “hey! I’m the leader and y’all follow me!” They wear no “I’m the leader” badge and can only be identified as such through the traces left by their actions.

Leading is accomplished through the execution of tasks, the strategic directing of other players and use of a skilled tactical communication style. Thus, it is an emergent property of play, rather than a role formalized by game designers. While other players seem to acknowledge the leadership of certain players, it is rare that they openly designate someone as the leader of their group or team. Our case studies also show us that the self-proclaimed leaders, the ones who do openly ask to be seen as leaders, often are marginalized by other players and can end up feeling unsatisfied with the looser tact team structures.

Our fourteen case studies also show us that popular ideations of leadership as being aspects of high performing players [5,6] or of only certain kinds of players (such as lieutenants, but not privates) was not applicable in ILB. Based on our cases, even privates demonstrate aspects of leadership modalities and mindsets. This suggests to us that leadership in ludic environments needs to be better understood and studied as a contingent assemblage of possibility. Leadership can be actualized, neutralized or negated by a variety of other modes, contexts, and design decisions. These diversities include: geographic location; other players’ modalities; game goals; gaming expertise; social norms and social sanctions; and technological prowess. Designing systems and interfaces for these ludic environments requires sensitivity to this multi-modal nuance. We call this assemblage a ludic ecology and identify this as another opportunity for future work.

**Modalities, not Typologies**

Following from [2] and [28], we identified two sets of modalities within ILB game practice, which are grouped within practices that we find demonstrate leadership and expertise. However, unlike some game studies work, we highlight the fact that modalities are quantifiably and qualitatively different than a typology of either players [1]
or organizational practice [2]. A typology is a fixed and bounded category. Types are inherently reductionist and their use artificially reifies the contingent, messy and personal nature of play. Instead, we adopt the idea of modalities of play. Noting that the term modality has various inflections in HCI work, we use the term in the same sense as it was employed by [28] and [16] to describe patterns of behaviour within sets of practices. We derive it from the term mode, understood as being a factor or an influence in the actions used in a practice. An important caveat noted by [28] is the sense of the multiple and overlapping character of a modality, so that a modality is never a fixed, perfect or exclusive pattern of action. Most modalities are part of a continuum of behaviour, and as such, identifying specific play modalities is done using a set of “sliders”. A modality is intended to be part of an inflected and highly individual action pattern within specific sets of play.

Leadership Modalities
Aspects of leadership in digital teams have been described by [2]. Drawing from a cross section of management literature, they identified five facets of leadership in digital teams: team process management; team motivation and new member assimilation; team monitoring and individual accomplishment recognition; appropriate intervention to overcome challenges; and the maintenance of a strategic sense of a team’s needs relating to their overarching goals.

<table>
<thead>
<tr>
<th>Behaviours</th>
<th>Leadership Type &amp; Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Feedback</td>
<td>Transactional Leadership: Energize people through acknowledging work and provides reward</td>
</tr>
<tr>
<td></td>
<td>Example: This was a great day in DC, congratulations all! (C12)</td>
</tr>
<tr>
<td>Negative Feedback</td>
<td>Adverse Leadership: Regulate people through reprimands</td>
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<td></td>
<td>Example: I hope somebody recorded the unavailable .wav, because I would be really pissed off if we missed some of the story due to people being too lazy (C1)</td>
</tr>
<tr>
<td>Directing</td>
<td>Directive Leadership: Direct people through issuing instructions, commands, assigning tasks, setting goals</td>
</tr>
<tr>
<td></td>
<td>Example: We know exactly where these phones are. Do not reinvent the wheel. (C14)</td>
</tr>
<tr>
<td>Social Exchange</td>
<td>Transformational Leadership: Promote emotional engagement through for example nice talking, starting off-topic conversation etc.</td>
</tr>
<tr>
<td></td>
<td>Example: I was thinking about having some dinner up there. If enough people PM me that they are interested I’ll get a big table and tell the host/ess to send anybody looking for Beekeepers my way. (C8)</td>
</tr>
</tbody>
</table>

Table 1: Leadership modalities [33] with case examples
Our analysis looked for markers of these leadership indicators to select out our specific cases and match them to their leadership style. We also looked for markers devised by [33], focusing specifically on the distinctions between tactical, strategic and person-focused aspects of leadership. We align to their argument that leadership in online communities is based on a shared process of contextual contribution over time, individual positioning relative to group tasks and goals, and attention to team and individual position, strategies and accomplishments.

While the work of [33] is intended for quantitative studies, we found their theorization and exposition to be fruitful for our qualitative approach. Synthesizing their framework with the four facets of digital leadership we adopted from [2], along with ideas on the roles of providers-of-and-pointers-to-information and of gatekeepers in [15], we created a set of four sliders for leadership, called Positive Feedback, Negative Feedback, Directing and Social Exchange (see table 1). These evaluated the appearance of the modality in terms of high, medium, or low behaviour. We employed these to identify the leadership modalities in our case study dataset, expressed as features and degrees of play.

Expertise Modalities
We adopt the idea of gaming expertise as a situated multimodal expression from [16] and [28]. Both papers argue that expertise in gaming practice is not fully visible through simplistic binary constructs analyzed through single modes of play. Contrary to other notions of gaming expertise as encapsulated solely in elapsed time [17], achievement [26], or optimal efficiency [13], it has been argued that an experienced player demonstrates their ludic expertise through four modalities of play: investment, skill, discourse, and game knowledge [28]. All four modalities must be considered when examining individual player’s skill levels, and each modality must be taken into account when constructing an analytical framework to understand in-game practice.

Using the four modalities (see figure 1), we analysed the ILB play data from our 14 case studies, coded it for the modalities, and then used a slider system to rank each case’s modality expression in terms of high, medium and low appearance. Similar to [16], this modality slider approach gave us a situated analysis of each player’s primary and secondary expertise modality.

Merging these modes with the four modes of leadership, we have an integrated framework for analyzing leadership and expertise capabilities within and across our 14 cases.

![Figure 1. Leadership & Expertise Framework](image_url)
Modalities & Ranks

After creating a leadership and expertise profile for each player in our fourteen cases, we followed the military structure adopted by ILB players themselves, and assigned each case a rank. These definitional rank categories were based on our interpretation of players’ worldview. This resulted in: 1 general, 5 lieutenants, 7 privates, and one “transitional” player, who started as a private and rose to the rank of a lieutenant during the game’s lifecycle.

- Generals: C14
- Lieutenants: C2, C4, C5, C6, C11
- Privates: C1, C3, C7, C8, C9, C10, C13
- Transitional: C12

The transitional player is an interesting exceptional case. He personifies the ways in which leadership and expertise modalities are not solely individual player characteristics. His play style and communicative approaches demonstrate that ARG play must be understood contextually.

While we do not separate out the exception represented by C12 from the other privates in the following discussion of each rank’s actions and stories, we assert that our understanding of C12’s emergent leadership style shows to us that system designers must understand leadership and expertise as modalities, not typologies.

Generals

A general is an individual who possesses the characteristics of a leader most often identified in research literature [2,15]. She demonstrates high-level, strategic thinking and exhibits extensive use of directive language, using both game jargon and politically neutral phrasing. Even on occasions where the situation is tense between her and her squad, she keeps a calm countenance and polite but strong demeanor. A general is an expert at providing positive feedback, acknowledging players’ work and providing rewards. She also promotes emotional engagement via social exchange. In traditional MMOG systems, this individual would most closely align with a guild master.

In our cases, we have a single example of a general (C14), a coincidental finding that aligns with the relative rarity of generals in actual world militaries (e.g.: In the US Army, there is one general for every 2444 active duty soldiers [21]). Figure 4 shows our general’s leadership and expertise (L&E) profile. This player displays extensive use of directive language, for example exhorting players to post information on what phones they covered, to focus on the most obvious axons, and to reuse prior information.

“We know exactly where these phones are. Do not reinvent the wheel. Look up this thread for links to C12’s page - it has the exact locations and consolidated map info and a description of exactly which phone it is (there’s multiple phones some places). He may not have updated the times and axon order to the new list but the location info is ALL YOU NEED” (original emphasis)

This player employs strategic thinking, particularly with regards to knowledge of the game, axon hunting and coverage strategies, and player coordination:

“If you meet someone there that can commit to cover another one, get their nickname and a way to reach them so we can add them to the team and save someone else the trouble of getting to an axon that is covered”.

“If you can, let people know here which ones you are definitely going to try so, if schedules are tight, others with a little time can focus on ones you aren't planning to get to.”

C14 demonstrates a high level of skill, using both her geographic and civic knowledge of the area to point out potential challenges (i.e., traffic and road closures) as well as to suggest potential tactics to overcome these challenges (i.e., leaving more time to reach a location):

“The Marine Corps Marathon and a couple disease marches take place Sunday so traffic, esp. around the Mall, will be disastrous. Whatever you plan to do, LEAVE EARLY, because if traffic is screwed up by the marathon it will all default to other access points to DC and THOSE will be very busy too.”

In addition, she uses team-created tools to apply previous knowledge obtained in the game to current situations (i.e., information on how to do a task), and she speculates on the difficulty level of a task based on challenges faced at previous, similar location:

“At a guess - since it looks like an apartment building - this may be hard to find. The coordinate is probably for the address generally and not for the phone specifically, although it never hurts to scope out the exact spot just in case. But assuming it's the coordinate for the entire property -- you're looking for a payphone. Presumably in a public area. Check the payphone directories to see if one is listed for that address - that is a good (not perfect) indicator that it MAY be the phone [a PM] will call. Otherwise, follow your nose. Can you get into the building lobby to check (maybe not, security in many such buildings would not let you that close)? If not, you may be SOL. Is there a payphone by the tennis courts and/or pool you see on
the acme map off to the side? Assuming they are still open?"

She goes beyond situation reports to provide theories and strategies based on previous attempts. She also recruits players to take on tasks, as well as suggests who should do which tasks based on the previous week's activities:

“We had an axon in Virginia that was never gotten - we THINK it was in the pool area of an apartment complex, but the pool shut for the season before it could be tested. Get there early - scout all possibilities. If you find a phone, call it from your cell to make sure it takes incoming calls. If there's no number on it, use it to call your cellphone to get the number, then call it back. If it does not take incoming (don't believe what the phone signs may say - test it yourself), move on to the next phone. If you strike out on the first phone (that's 10:57 AM tomorrow our time), [the game designer] apparently will keep calling it all week, even if the axon is reported as "cancelled" when the sound clip is released. So you'll have a second chance if there are other possible phones.

C14 manages a resource list of axons that she expected her team to reference and use:

“If you are submitting a new axon, find one that is convenient for you, near home or work so you can get it any time of day. No need to focus on whether you are also replacing a nonfunctional axon; just supply pictorial proof of another payphone that works. Also, my axon list (previous page of thread) is fixed for now (thx C20), also removed distracting but fun references to international axons.”

Lieutenants

Based on the L&E modalities framework, a lieutenant is an individual who is leadership-oriented but who tends to escalate issues to a higher rank rather than take charge of issues. While he displays some strategic thinking, he predominantly focuses on tactics to solve more immediate, short-term problems, rather than employing strategies for long-term objectives. While there are some differences, the closest approximation we can make between the lieutenants in our cases and the existing literature would be the roles of gatekeeper and provider—of and pointer—to information, found in [15]. We found that lieutenants use directive language similar to that of a general, but that they are more prone to performing tactical team management, especially as it relates to the provision of feedback with lower level players. This individual is also less likely than the general to promote emotional engagement via social exchange. In a traditional MMOG play, this individual would most closely align with a guild officer.

In our cases, we have five examples of lieutenants. However, when a temporal aspect to each L&E modality is closely examined, we found that only two of the five cases of lieutenants showed stability in their L&E modalities (C2, C11). Three cases (C4, C5, and C6) all displayed emerging properties of generals. In C4's case, it is our contention that he would have become a general if the game had lasted longer than four months. C5 wanted to be a general and was frustrated with his team role as a lieutenant. This led him to abandon the game early. C6 showed many possible L&E markers of a general, similar to C4. However, because C6 was in the same geographic location as C14, the only full general in our dataset, this player did not progress to general.

In line with our L&E framework, these players focused predominantly on the use of tactics to address immediate problems, thus demonstrating a high level of skill. For example, C6 provides detailed information from scouting activities as a means to narrow down the location of a task:

“I estimate that covering the back wall would take at least two, probably three people for a single axon, or one person over two or three different tries. The last group on street level is inside the triangle formed by Gate G, the rental car counters, and McDonald's. There are about twelve phones there as well. The final set of three phones is on the lower level just at the entrance to the Metro.

C6 also exhibits transactional leadership, suggesting players meet for lunch while on axon monitoring duties:

“If anyone else wants to join me we should cover the largest banks first since the odds seems best there. C20 and I are planning some lunches there next week to keep coverage up. PM or AIM me if you'd like to come along; we can exchange cell phone numbers.”

C6 further demonstrates their skill by providing tactical information on how to best complete a task, informing players to use maps and satellite images of the location:

“Go ahead of time armed with your maps and satellite photos. It shouldn't be too difficult to scout out; the all the axons on that campus seem to fairly well represented by their coordinates. Have someone reachable by cell phone who can access the IRC Channel and online maps and charts if need be.”

C2 also exhibits a number of examples of tactical thinking. She identified game mechanic patterns of axon releases and
time periods, enabling her to suggest plans of action for axon hunting. She coordinated group coverage of axons in a way designed to maximize group benefit while minimizing group effort. She was an advocate of team task tracking, using a group list maintained in the team forum as a way of knowing who was doing what and when. She also directed others in her team to document their activities by providing frequent situation reports:

“Do you mean you’ll be backing up C3, downtown? I’ll add you to the list. Thanks! Edit: Err, what I meant to ask was, once you’ve gotten the 4th and Stark phone (thank you thank you) are you going to take the rest of the downtown phones along with C3, or are you going up to 23rd to take those phones with C1? Either way, it’s great, I just want to know so I can update the list accordingly.”

Players who exhibited traits of a lieutenant also frequently made tactical suggestions for successful axon hunting. For example, C12 suggests that if players are alone to listen to the beginning of the recording and then drop the receiver in order to answer the next call:

“If it’s just one person, don’t bother listening to the recording, the calls come every minute. Once a call is hot, drop the receiver and move on. If the earlier patterns hold, the first one or two calls will go to the au bon pain phones; skip them if you’re alone.”

Moreover, C11 suggests telling non-player civilians who want to use the payphone that it is out of order to keep them off the phone during the designated time, indicating that it had worked when he had tried it previously:

“I’m telling you, what worked for me is this: Someone approaches the phone, and just tell them, very authoritatively, ‘These phones don’t work’. Amazingly, the person will invariably take what you say as gospel. I mean, why would a stranger lie about something like that?”

In keeping with their ‘middle management’ style, lieutenants were the individuals most likely to create and maintain team task lists. These lists were managed in a variety of ways through a variety of technologies, including excel lists, web pages, and internal forum lists, and were used to keep track of not only the task to be accomplished, but also to whom the task was assigned. C12, for example, created a Washington, D.C only status website to document both location information and completed axon status. In the following quote, C12 explains the multiple roles of the website, but does not explain the potential use of the site, nor its advantage to the group (which would be a general’s strategic task):

“Each location has a graphic created from street maps and satellite imagery: both the mapquest star and acme crosshair locations are present. If a phone was positively identified, I’ve marked that with a white phone icon. Notes from previous forum posts are included, please let (sic) any updates from previous or new visits and I’ll incorporate the information. If someone has said they’ll be visiting a particular axon, I’ll add that information in red text.”

Overall, the lieutenant’s role seemed to fit a middle manager straddling the fine line between “doer” and “thinker”.

Private

We view a private as an individual who displays minimal strategic or tactical thinking. She takes orders and provides situation reports on tasks accomplished, but does not offer a lot of insight on how to approach a task or solve a problem. This individual is also more likely to receive than to give both positive and negative feedback. In a traditional MMOG, this individual would be characterized as a guild member. Figure 6 provides the leadership and expertise profile for C13. This private’s L&E profile was reasonably consistent with the other privates in our cases.

In our cases, we have five examples of privates. In line with the L&E framework, these individuals exhibited very little strategic or tactical thinking. Indeed, their primary function in the game was to take orders or to volunteer for tasks, complete tasks and report back via situation reports.

C13 showed a high investment in the game, but his investment came mainly in the form of providing reports on his axon hunting activities, and also providing recognition for the efforts of fellow teammates. While he uses the common game term of axons occasionally, he tended to use the ‘real world’ term payphone more often:

“C22 and I hit the 17:59 ""creepy"" axon. It's the third pay phone from the left in the Convention Center, which is just east of the Burbank Airport Hilton. Full credit to C22 for actually making the connection; I was watching the bank of phones in the hotel itself./me objects to paying for parking just to hit an axon.”

C1 provides information on the location of a task, pointing out that a particular axon (or rather phone) does not exist:

“Just wanted to give a heads up for the SW 107th & Allen axon... it doesn’t exist. At least, there’s no phone out in the open that I can spot. On the one side of allen there’s a hotel called the Greenwood Inn (or something
to that effect), and on the other side is some trucking company, neither of which I could see a phone, especially near the road."

In addition, players who exhibited the traits of a private also provided information to help players successfully locate and activate axons. C8, for example, offers details on particular challenges with parking. She also provides players with an annotated map of the area and a link to a PDF version of the map, which provides detailed information on the campus and the surrounding area:

“Here’s a map of campus that I’ve marked up with important locations. Here’s a link to the actual pdf of the map where you can actually read things. [...] This page is very useful in finding UCI [...] Do NOT park at the University Center strip mall and walk over the bridge... This is Irvine, they ARE watching you and the WILL tow your car. Parking lot 16 is $1 for an hour, $2 for 2 hours, and $5 all day [...] I’ve taken to parking at SPSS 58/79 (Across the street from University Center.) It’s more expensive but much more convenient to the axons.

Similarly, C10 informs fellow players that the location of a task will be closed during the time the payphone is scheduled to ring, and to therefore bring snacks along and use the restroom before heading to the location:

“Make sure you don’t need restrooms or snacks before going up there, since the place closes at 5:15PM (grounds are still open until sunset, however).”

In a few instances, players who exhibited the traits of a private asked other players to document any information that could assist future axon hunting. C13 for example, asks C21 if he was able to make it to a particular location, suggesting that the information would help ensure that efforts were not duplicated:

“C21, were you able to make it over there? If so, which phones did you rule out, so we don’t duplicate efforts?”

IMPLICATION OF FINDINGS
In our data, players enjoyed being able to self-organize into teams, and to group, rank and manage each other based on their expressed teamwork tendencies and styles. Players also criticized the game designers for ILB’s lack of tools to facilitate teamwork, reporting, and communication, and they decried the lack of workflow and web publishing capabilities built into the ad-hoc tools they did employ, such as spreadsheet applications.

We therefore find that tool choice and use within ludological teams is based on leadership modalities. The choice of tool is based on the different types of task that are taken on by the different leadership rank tendencies. In ILB, privates tended to concern themselves with task completion, whereas lieutenants addressed tactical task management, and the general determined strategic task direction, managed group identity and oversaw strategic communication. Teamwork, communication and collaborative tools in a game system must therefore be flexible, and enable their contextual deployment. Providing tools based on players’ demonstrated needs, and their demonstrated leadership modalities would inform sensitive contextual design around tool design.

We suggest that future ARG designers, or designers of systems that contain ludic elements, take this infrastructure tension under advisement. We further suggest that interface designers can use the leadership and expertise modalities detailed here as a way of understanding the contextual requirements for interaction, communication or progression within the systems they design. We believe that the L&E modalities can be used to craft system elements that can foster and support specific ludological leadership and expertise modalities.

CONCLUSIONS
Our research was driven by three research questions around themes of military tropes, leadership and expertise. Through our construction of fourteen illustrative case studies, which presented the in situ stories of fourteen players across more than 4,700 posts, we confirmed that we can read these discursive streams as war stories. Synthesizing a leadership and expertise modalities framework out of existing work, we used the L&E modalities as analytical tools to understand our case studies, and we found clear indicators of contextual leadership and expertise behaviour. The strongest leader was the general, who used a strategic management style and directive language to organize and control her team’s play. Our lieutenants straddled the strategic and tactical behaviours, showing high indications of social management communication styles, and tactical skill. The privates exhibited primarily operational behaviour, providing ‘sit rep’ task reports of accomplishments and challenges, and demonstrating levels of investment through finishing axon hunting tasks. The accomplishment of game successes despite a lack of formal team and task management tools suggests to us that strongly formalized game systems are not always necessary for computer-supported cooperative play. We advise designers of ludic systems to take into account the context of play, and to design for the emergent properties of leadership and expertise modalities.

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