The Enrollment of a New Technology and the Subsequent Redistribution of Roles and Responsibilities in an Online Game

http://markdangerchen.net/media/blog/2011/04/Chen.AERA2011.enrollment.pdf
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Abstract: Using actor-network theory and distributed cognition, this paper describes how a new third-party modification ("add-on") was adopted and enrolled into the coordinated action involved in team battles of a player group in the massively multiplayer online game *World of Warcraft*. The add-on was instrumental in helping the group become efficient and successful with many in-game battles. Interestingly, after playing a *temporary* role, its use was no longer necessary for a specific in-game encounter, since its original intended role never needed to be filled in that specific fight. This analysis helps us see that people and their material resources collectively share responsibilities and that the distribution changes over time as new challenges are met and as new actors enter the network.

Keywords: Ethnography, collaboration, video games, actor-network theory, distributed cognition

Questions

- How do online gamers negotiate roles and responsibilities for successful group work?
- How does a new technology become enrolled into the network of play?

Theory

- push-pull relationship of contentious parties in a mangle of practice / gaming (Pickering, 1993; Steinkuehler 2006)
- parties may be human **or** nonhuman and must agree on roles and responsibilities for successful play; it is an actor-network (Latour, 2005) where cognition is distributed (Hutchins, 1995)
- successful group work necessitates successful assemblage (Deleuze & Guitarri, 1987; Taylor, 2009) and arrangement (Stevens, Satwicz, & McCarthy, 2009) of actors (AKA sociomaterial resources)

Setting and methods

- online ethnography (cf. Taylor, 2006; Steinkuehler, 2007)
- massively multiplayer online game (MMOG) *World of Warcraft* (WoW) (Blizzard Entertainment, 2004)
- followed a specific group of players in WoW for 10 months, capturing text and voice chat, in-game videos, and message board forum threads
- discourse and interaction analysis
- 6 million players in 2006; 11.5 million in 2010
- fantasy role-playing game where players create characters of different races (humans, elves, etc.) and classes (warrior, rogue, etc.) (see Figure 1)

Figure 1. World of Warcraft character creation screen showing a male orc rogue.

- complete quests, kill monsters for loot and experience points, which leads to having more powerful characters that can take on harder challenges/monsters

- group’s activity known as *raiding*—fighting difficult *boss* monsters together to reap huge rewards
  - took weeks to learn how to kill each boss monster
  - highly coordinated with each of the group members playing specialized roles (Chen, 2009)
  - went into in-game zone known as Molten Core (see Figure 2)

Figure 2. World of Warcraft in-game raid zone, Molten Core.

The basics of WoW fights

- characters divided into tripartite roles: tank, healer, DPS (see Table 1)

Table 1
Roles in World of Warcraft *by Character Class (Horde-side, Spring 2006)*

Role	Classes
Tank	Warrior, Druid (bear form)
Healer	Priest, Shaman, Druid
DPS	Rogue, Druid, Hunter, Mage, Warlock, Shaman (elemental spec)

- monster will attack whichever character is the most threatening, as measured by *threat level* (see Figure 3)
  - every ability a character uses generates a specific, consistent amount of *threat*
  - tanks’ job is to keep the highest threat level
  - healers keep tanks alive by casting spells that heal damage taken
  - DPS kills monster without getting too much threat

Figure 3. Illustration of a fight sequence in *World of Warcraft*.

- at beginning of this group's life, threat level was calculated in players' heads
  - not very accurate; dependent on too many variables (experience of player, conditions of current fight, what other players were doing, etc.)
  - **misconception:** players thought threat was a consistent number, depending on character class and timing of abilities (see Figure 4, left)

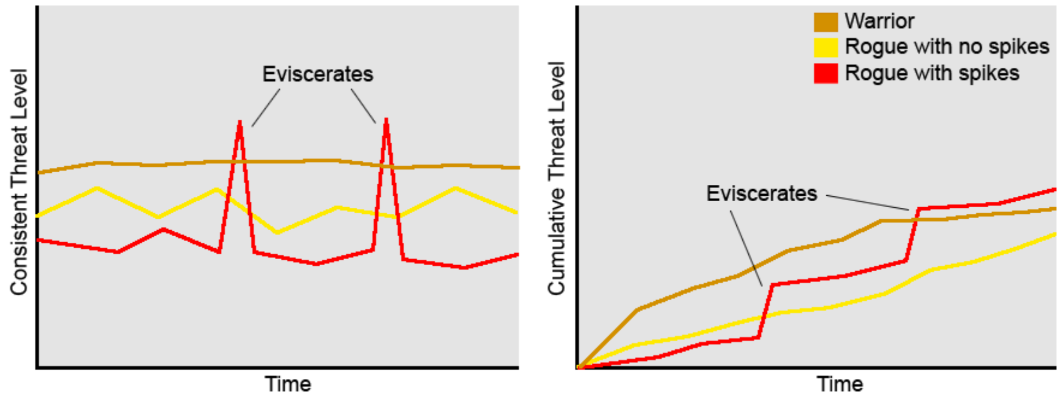

Figure 4. Graph on the left shows threat as a consistent level that fluctuates based off of activated abilities such as Eviscerate. Graph on the right shows threat as a cumulative number that increases more or less quickly depending on activated abilities. Before KTM, a common misconception was that threat worked like in the left-hand graph. KTM demonstrated that threat was more like the right-hand graph.

- 4 months into group's life, new tool introduced to game community = KLH Threat Meter (KTM)
  - KTM = no longer keeping threat numbers in players' heads (see Figure 5)
  - group offloaded cognition onto this common tool

Figure 5. A section of my user interface during a raid battle, showing various add-ons in use. KLH Threat Meter (KTM) can be seen on the left side, displaying the top ten current threat levels of various members of the raid group. Warren and Wendy are the main tanks for the group.

  - KTM showed us that threat was incremental and persistent (see Figure 4, right)

How KTM was used to fight Ragnaros

- during fight with Ragnaros, rogues (DPS) kept dying (see Figure 6)

Figure 6. An unsuccessful fight with Ragnaros, the final boss monster in Molten Core.

- **hypothesis:** it was because rogues had too much threat
- yet KTM showed that it wasn't threat level; this forced rogues to re-diagnose problem
- arguing about whether threat was problem spanned across several attempts at killing Ragnaros (see Figure 7)

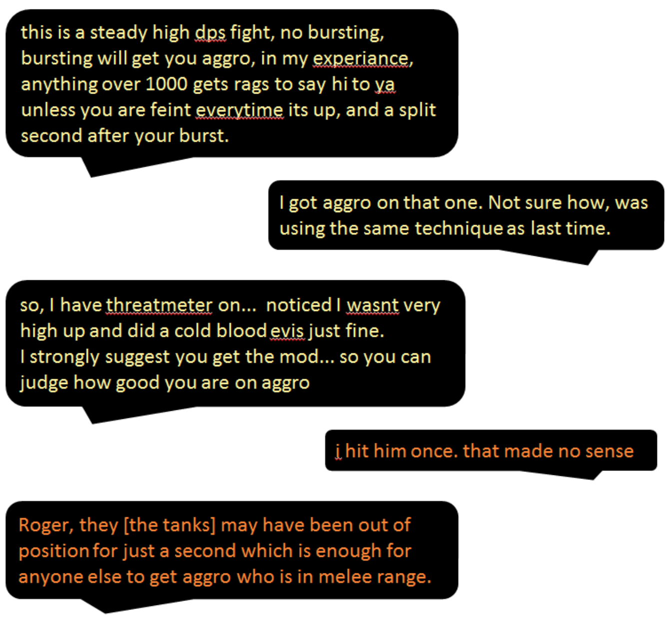

Figure 7. Text chat from rogues trying to make sense of why they were being attacked by Ragnaros. Initially, the rogues talked amongst themselves using a special chat channel just for rogues (colored yellow). One rogue argued that threat was not the problem, enrolling KTM (threatmeter) for this argument. This prompted another rogue to mention the problems he was having to the full raid group (colored orange). The raid leader then informed him that maybe the tanks were not yet in position.

- after elevating talk to larger group, learned that rogues were getting to Ragnaros before tanks whenever Ragnaros periodically threw everyone around him backwards a few yards
  - Ragnaros attacks whoever has the most threat that is close by.
  - Since the tanks were not close by yet, the rogues were being hit even though they did not have the highest threat level.

Discussion and conclusion

- KTM originally authored to keep track of threat level
- local player group enrolled KTM for a temporary role rather than designed role
    - check whether threat was problem rather than constant use of KTM to keep track of threat
- transparent discourse around KTM's temporary use was of utmost importance for group's eventual success
- KTM took on responsibilities **and** delegated new ones to group
    - had to abide by its numbers if group was to succeed
- thus, new actors to a network require a redistribution of roles and responsibilities
    - situated in local practice with available technomaterial resources (Latour, 2005)

This is an important insight into group work in both formal and informal educational contexts. Designed curricula, tools, and structures that make up a learning environment are negotiated with by learners such that the practice of learning and doing emerges from a push-pull relationship that is constantly shifting and being renegotiated over time. Players and learners use available sociomaterial resources, and it is their stable assemblage of these resources—some of which are assigned roles and responsibilities that do not match designed intent—that allows the learners to be successful.

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[Full paper at http://markdangerchen.net/media/blog/2011/04/Chen.AERA2011.enrollment.pdf
or the AERA online program]

[Bonus poster on the other side!]

Group Expertise in Online Gaming as Sociomaterial Practice

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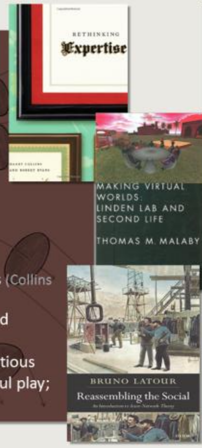
Questions

- How do online game players develop expertise in joint-task activities?
- How do they develop trust in each other for effective coordinated action?

Theory

- Expertise exists in multitude of social contexts
- Developing expertise requires access to expert groups (Collins & Evans, 2007)
- Access and legitimacy depends on accrual of social and cultural capital (Bourdieu, 1986; Malaby, 2009)
- Game playing is socially situated with multiple contentious agents that must agree on common goals for successful play; it is an actor-network (Latour, 2005)



Ethnographic methods (Steinkuehler, 2004)

- Pool of 60 regular players, 40 per session
- Met 2-3 times a week for 10 mos (11/05-8/06), 4-5 hrs each time
- Larger ethnography has over 1000 hrs of chat data
- ~100 hrs of video + select posts on web forums
- Disciplined perception (Stevens & Hall, 1998)

a magic item that warlocks can give to others so that they can come back to life if they are killed

priests and shaman can bring others back to life (resurrect)

Remember, who you give soulstones to will change when we encounter Majordomo Executus, but, until then, the priest or shaman who you've been assigned to should have your soulstone at all times.

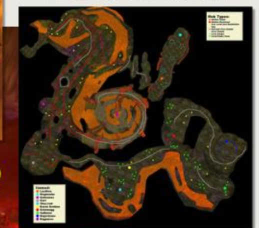
Remember, ss target will change at Domo, but until then, your rezzer is to be ssed at all times.

it's important to give rezzers the ability to come back to life so they can rez the rest of the raid group

Setting: *World of Warcraft*

character creation

- Massively multiplayer online game (MMOG)
- 6 million players in 2006
- Fantasy with races / classes
- Complete quests, kill monsters for loot and XP



Molten Core, an in-game raid zone

What is raiding?

- Large group joint activity
- Highly coordinated
- Specialized roles
- Organization and leadership

Findings

Expertise as game mastery

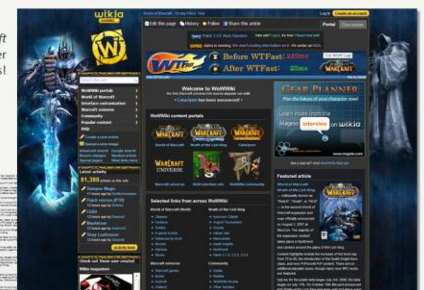
World of Warcraft as a game of numbers

Traditional notions of expertise would state that players are experts when they master the content of the game and understand the game's underlying system of rules.

Expertise as assemblage of sociomaterial resources

Successful play often depends on the use of player-made game mods (ie, Hutchins's distributed cognition, 1995), problematizing the content-knowledge definition of expertise.

World of Warcraft wiki with over 80,000 articles!



Successful players also use external resources such as web guides written by other players.

Sometimes these material resources push back, break, or rebel. This is one way in which the gaming activity is a "mangle of practice" (Pickering, 1993; Steinkuehler, 2006).

Cognitive frameworks for expertise don't account for emergent situated practice that depends on available sociomaterial resources.

Nor do they account for the socially situated nature of group expertise.

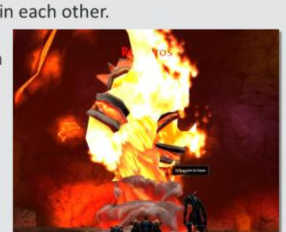
Trust is necessary for effective group work

We could link our performance level to our communication level. Additionally, the quality of communication was more jovial and laid-back.

When the group suffered internal conflict, dissolution was prevented by realignment / reiteration of group values.

It's this continual alignment work where players actively negotiated roles and responsibilities that built up our trust in each other.

By participating in the group over several months, players became socialized to values that were important to the group.



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