

**Technologies of the Childhood Imagination:
Yugioh, Media Mixes, and Otaku**

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I want to start by briefly situating my own background and approach to children's new media because I expect my work is new to many of those of you gathered here. I was so pleased to be invited to participate in this conference because I knew it would be an excellent learning opportunity for me -- while my work is more and more entering the domain of media studies, my own background is somewhat different.

My training is in anthropology, and although I do have a degree in education, mostly my work has focused on how children and young people use computers outside of schools, in afterschool contexts, at home, and on the street. My current focus is on Japanese technoculture, particularly what I am calling personal, portable, and pedestrian media forms such as the mobile phone, comic books, trading cards, and portable game devices. What I have been trying to do is to understand what is happening as media engagement moves from largish screens viewed in stationary places such as the office, home or movie theater, to small handheld screens and objects that occupy users at more diverse settings of engagement and play. Or more accurately: How can we understand the hybrid media ecology that is emerging as a relation between big and little screens, sustained immersive and more lightweight forms of engagement? My challenge as an ethnographer is how to track and observe these practices that are produced and engaged with at highly distributed sites.

Methodologically, I am committed to many of the traditional tenets of ethnography, looking at local and everyday practices, particularly of marginalized groups, and analyzing this in terms of cross-cutting cultural discourses and social institutions. At the same time, my work departs from a traditional anthropological process that has tended to focus on immersion in geographically localized communities, whether a village, a workplace, or a school. My work has involved moving among a wide variety of sites and tracing linkages between them, linkages that are made up of not only human relationships but relationships mediated by mass media and commodity capitalism. In particular, I've been trying to develop ways of studying, from an ethnographic perspective, processes that are more commonly pursued from a macro

sociological perspective, such as the relationships between production, distribution, marketing and consumption.

The work I'll be describing for you today is based on several years of fieldwork in Tokyo, focused on the period between 1999 and 2001.

I have been following children's media around different sites of production, distribution and consumption, including homes, an after school center, hobby and card shops where gamers gather, retail, conventions and tournaments, as well as to the corporations that produce the content. I rely on a standard ethnographic toolkit of hanging out, interviews, observations, and literature reviews.

While technologies like the mobile phone, game boys and trading cards are certainly not exclusive to Japan, I've been focusing on Japan as an a setting which has been incubating a particular kind of technocultural imagining that is intimately tied to these small scale consumer technologies and media forms. This is also related to a kind of media tinkering that has been associated with the subcultures of otaku, of Japanese media geeks.

I have been looking at both boys' and girls' play and media, but I am going to be focusing on a case of boys' content. Part of this is just because of time limitations. But this is also because in the media mix equation male content is and has been culturally dominant, setting the trends that may or may not filter down to girls content.

In looking at the range of sites and practices associated with new media in Japan, I have been trying to work against the distinctions that we commonly make between sites of production (associated with media industries) and sites of consumption (associated with children and other media consumers). Rather than see centralized and highly capitalized sites as the sole sites of cultural production, I have been looking at the activity of children and young adults as sites of not only consumptive activity -- that is, buying, watching, and reading centrally produced media -- but also productive activity -- not only reinterpreting these texts, but actually reshaping and recreating related media content and knowledge and selling and trading those locally created products. And in turn the media industries become consumers of these locally produced knowledges and products in ways that inform their own productive activity. In this I am very much indebted to scholars of media reception and fan communities in particular, many of whom are represented in this room today -- in my work I have been trying to bring these approaches together with practice based ethnographic approaches to technology use.

I am assuming that this move towards complicating the distinction between production and consumption is not in itself unfamiliar to those gathered here. What I hope to do in my remaining time is to make this a little more concrete through my ethnographic material, focusing on the ecologies of peer-to-peer cultural production and exchange that have been built up through particular technoimaginaries in Japan. These are cases that occupy that grey zone between sites that we commonly associate with cultural production and those sites that we tend to associate with cultural consumption.

Yugioh

Let me start by introducing Yugioh. Yugioh is a media mix content series which started as a manga (comic) series in Shonen Jump magazine in 1996, and has since spawned a television animation, two different card game versions, a feature film, over ten different Playstation and Game Boy games, and a wide range of licensed character goods. The anime was released a few years ago in the US and soon after in the UK, and is currently among the most popular media content for young boys.

The most popular form of engagement with Yugioh is the official card game. During the peak years around 1999-2001, Yugioh cards were a pervasive fact of life for Japanese children. Among elementary aged boys they reached nearly 100% market penetration, and even among girls, almost all owned some Yugioh cards.

The hero of Yugioh, Mutou Yugi, is a high school boy with a split personality. His original personality is one of a small, weak, skinny and unpopular kid, whose one strength is his skill in playing games. One day, he solves a complex ancient Egyptian puzzle and unlocks a hidden spirit of an Egyptian pharaoh within it, which becomes a second personality for him, powerful, secure, decisive, and ruthless. The two Yugis use their game expertise to combat forces of greed and evil, battling with adults as often as with other children. The series focuses in particular on a card game Magic and Wizards, a thinly veiled reference to Magic the Gathering.

Yugioh, like Pokemon, is a story of children using competitive play as an arena to address serious social inequities and problems, and to engage with adults as equals. It inverts the traditional power dynamic between adult and children's culture, and between play and work, making children's play the center of consequential social action rather than a marginalized and trivial domain of consumption.

Yugi embodies much of the innocence and frailty that we associate with a child, but he also has unique powers and an

inner moral strength that exceeds that of his more grown-up peers and the often greedy and immoral adults that he encounters in his adventures. In general, the worlds of children are depicted as different and more moral than that of adults.

The boys who I encountered in the course of my fieldwork engaged with Yugioh at multiple levels. Most owned versions of the game boy game, read the manga at least periodically, and watched the TV show. But the most popular is the card game. All of the boys I encountered had some kind of collection of cards that they treasured

Yugioh cards have been released in a variety of forms, including ready-to-play packs, vending machine versions, and limited release versions packaged with game boy software, in books, and distributed at trade shows. The most common form of purchase is in five card packs costing ¥150. These packs are sold at convenience stores, toy stores, bookstores, and stationary stores, often right at the checkout counter. They are sold at a price point and locations that make it an easy purchase for a parent to appease a child while out shopping, or for a child to make on his own with a bit of allowance.

A new series of these five card packs is released every few months. When purchasing a pack of cards, one doesn't know what one will get within the fifty or so cards in a series. Most card packs have only "normal" run of the mill cards, but if you are lucky you may get a "rare," "super rare," "ultra rare," or perhaps even an "ultimate rare" card in one of your packs. This marketing strategy fuels a constant stream of purchases well beyond what most kids will actually use in their game play, as they try to acquire the most coveted cards.

Hypersociality

The standard process of game play is one-on-one, where duelists pit monster, magic, and trap cards against one another. Each player makes a personal playing deck of forty or more cards that reflects his personal style of play. Because there are several hundred possible cards, the combinations are endless.

Far from being passive or solitary, games such as Yugioh and Pokemon, and the related exchange of cards, monsters, information and money, are hypersocial, sociality augmented by a dense set of technologies, signifiers, and systems of exchange.

Yugioh is tied to activist, and entrepreneurial practices and expertise that many adults feel is not appropriate for

children. In contrast to fears of children disconnecting from social reality because of media, adult anxieties about media mixes tend to revolve around hypersocial behavior, where kids are coveting cards for social status or trafficking in cards with their peers or professional collectors. Parents in Japan who I spoke to had no problem with Yugioh play per se, but they often didn't like the idea of their kids trading, buying and selling cards with other collectors.

But Yugioh card game play is grounded in the premise that learning will happen in a group social setting rather than as a relation between child and machine or child and text. Anybody who has tried to learn how to play the card game can tell you that it is almost impossible to figure out the rules without the coaching of more experienced players. My research assistants and I spent several weeks with the Yugioh starter pack, poring through the rule book and the instructional videotape and trying to figure out how to play. It was only after several game sessions with some elementary school children, followed by some coaching by some patient adults at a card game arena, that we slowly began to understand the basic game play as well as some of the fine points of collection, how cards are acquired, valued, and traded.

Children generally develop certain conventions of play among their local peer groups, and often make up inventive forms of game play, such as team play, or play with decks mimicking the characters in the comic series. Rules are negotiated locally, among peers, who acquire knowledge through extended peer networks, television, and comic books. Despite the difficulty of the rules, it is very rare for kids to consult the official help line or rule books, and they will engage in ongoing and sometime heated debate about the rules during the course of their game play.

The Yugioh card game, importantly, was not originally conceived of as a challenging game. Konami first released it as an easy to play version of Magic the Gathering. Surprised by the intensity of uptake by children and otaku groups, Konami has continued to release new cards and develop a more complex set of rules, evolving Yugioh by reading the response of its associated player groups. So I want to stress here how even in the everyday practices of average kids engagement with Yugioh, they are producing local knowledge and game play cultures that even have the effect of filtering back to the more centralized sites of cultural production.

The format of media mixes like Yugioh builds on the sensibilities of kids who grew up with the interactive and layered formats of video games as a fact of life, bringing this subjectivity to bear on other media forms. While reinterpretation of television, film, and print media has been

a persistent feature of media reception, media mixes consciously design for player level remix. And remix is a precondition of participation in these gaming cultures. Players build a personalized relationship to this content by collecting their own set of cards and virtual monsters and combining them into a deck or battle team that reflects a unique style of play. Pokemon decisively inflected children's video game culture towards personalization and recombination, demonstrating that children can master highly esoteric content, customization, remixing, and a pantheon of hundreds of characters.

Hamtaro

I'll say more on remix in a bit. But first, I want to give a quick example of girls content before turning to some of the broader issues in intergenerational relations and cultural production.

In some ways, the tighter connections between different media types like games and anime are making the technology side more appealing to girls in Japan. Pokemon is a good example of this. The anime and the cute characters brought in girl viewers, which in turn, drew girls in the gaming aspects, both the collection of the cards and the game boy games.

On the other hand, Yugioh relies on a similar kind of media mix equation, but the content is not as cute and as appealing to girls, so there is a strong gender split in popularity. I happened to be conducting my fieldwork at a time when Pokemon was on the wane, and Yugioh was on the rise, so I may have been seeing more gender differences than I would have if I had been doing my fieldwork a few years earlier.

But one thing I did find at the after school center was that anime were much more accessible across gender lines than games, which required more substantial investments of money and time. So when there was a video of Yugioh playing at the club, it attracted a good gender mix. But when the club hosted Yugioh card tournaments, there were very few girls that made an appearance.

In contrast to boys, whose status economy often revolves on skill in competitive play, with girls this is less central to their social lives. So with boys, once Yugioh became the dominant status economy for them they all had to play if they didn't want to be left out. With girls, I found that they tended to engage in a wide range of media that differed depending on their particular playmate. They preferred the noncompetitive exchange of stickers to develop their connoisseurship and cement their friendship circles. None of this is exactly news to people that have looked at the

gendered dimensions of play, but I did find these social patterns in my fieldwork as well. The other difference is that boys that tend toward the otaku in popular media content are often socially dominant. By contrast, girls who participate in the anime related otaku culture are somewhat socially marginal.

Overall, in terms of media mix content that makes its way to games, boys content is still very culturally dominant. It sets the trends in media mixing that girls content follows. And girls content *is* following. The trend is slower but now, unlike a few years ago, most popular girls content will find its way to Game Boy, though not to platforms like Nintendo or Playstation. There is yet to be a popular trading card game based on girls content, but there are many collectible cards with girls characters. Just to give you a bit of a sense of some of the current girls content, I will show you an example which was the most popular when I was conducting my fieldwork, Tottoko Hamutarou, or Hamtaro in the US.

Tottoko Hamutarou is the story of an intrepid hamster who is owned by a little girl. The story originated in picture book form. After being released as a television anime, Hamtaro attracted a wide following, quickly becoming the most popular licensed character for girls. The story makes use of a formula that was developed by Pokemon, which is of a proliferating set of characters that create esoteric knowledge and domains of expertise. While not nearly as extensive as the Pokemon pantheon or Yugioh cards, Hamtaro is part of a group of over twenty hamsters, each of which has a distinct personality and life situation.

When I spoke to girls about Hamtaro they delighted in telling me about the different characters, which was the cutest or sweetest, and which was their favorite. I spent a lot of time with girls at the after school center asking them to draw pictures for me of media characters. Hamtaro characters were by far the most popular, followed by Pokemon. In each case, girls developed special drawing expertises and would proudly tell me how they were really good at drawing a particular hamster or Pokemon.

In addition to a set of characters that appeal to personal identification, Hamtaro's commercial success hinges on an incredibly wide array of licensed products that make him an intimate presence in girls lives even when he is not on the screen. These products range from games, to curry packages and corn soup, in addition to the usual battery of pencils, stationary, stickers, toys, and stuffed animals.

Another important element of the Hamtaro media mix is Game Boy games. Three have been released so far. The first Hamtaro release, Iomodachi Daisakusen Dechu (The Great Friendship Adventure), was heavily promoted on television. The content of the game blends the traditionally girly content of relationships and fortune telling with certain formulas around collection and exchange developed in the boys media mix. Girls collect data on their friends and input their birthdays. The game then generates a match with a particular hamster character, and then predicts certain personality traits from that. The game also allows you to predict whether different people will get along as friends or as couples. Girls can also exchange data between Game Boy cartridges. So there is a model of collection and exchange that was established in the industry since Pokemon, but applied to a less overtly competitive girl-oriented exchange system.

In other words, there is a persistent gender split among boys and girls in terms of content and the way they play, but certain elements of the media mix are also making their way into girls content.

Otaku and Inter-Generational Boundary Crossings

I have tried to give you a sense of how both boys and girls are occupying the new media mix in popular culture. I want to turn now to intergenerational and learning issues.

For both boys and girls content, adults are increasingly becoming consumers of cultural products targeted toward children, and animation and comics are increasingly a site of intergenerational contact. But in the case of girls content the most broad-based engagement of adults is in the growing market for cute character goods. Approximately one third of all character goods in Japan are consumed by adults aged nineteen and older. It is quite unremarkable to see characters such as Miffy and Snoopy used for advertising adult products such as bank accounts, insurance policies, and vacation packages.

More insidiously, schoolgirls and childlike comic characters are becoming widely acceptable as objects of adult male desire. Even though girls are not necessarily orienting toward otaku-like groups so much, otaku are orienting toward girls, or at least images of girls. Trade shows like the annual Character Show are oriented primarily to the young adult male otaku, and you see erotic images of young girls alongside booths selling Snoopy pencils and Hamtaro note pads.

Coming back to the specific case of Yugioh: Like most other kinds of popular anime and game content, Yugioh has an avid following of teenage and adult fans. These fans frequent the

specialty hobby and card shops that buy and sell single cards, and which sometimes provide duel spaces for players to gather and play. With the advent of the Internet, the communication and organization of core gamers has exploded. A quick web search will bring up hundreds of pages related to Yugioh, ranging from publishers of fan zines (doujinshi), to pages devoted to video game tips and cheats, to pages devoted to the exchange of information about the official card game and buying, selling, and trading cards.

Core gaming communities are in an uneasy relationship with the entertainment industries that create Yugioh content. They exploit gaps in dominant systems of meaning and mainstream commodity capitalism, mobilizing tactics that are a thorn in the side of those relying on mass marketing and distribution. In my research on mainstream industrialists and publishers, most are quick to distance themselves from otaku markets, preferring to align themselves with what they see as normative or "regular" (futsu na) children.

Let me give you one example of the tension between mainstream industry and the otaku market. One kind of expert knowledge is known as sa-chi "searching" which are methods with which card collectors identify rare card packs before purchase. Collectors meet with each other on rounds of convenience stores sharing tips and techniques. Thus I find myself out at one am with a group of card addicts, standing in the corner of a convenience store eyeing and pawing through three boxes of just-released card packs presented by a grudging but amused salesperson. We are successful in identifying all of the rare, super rare, and ultra rare card packs in the store, before heading out to make rounds of all neighborhood convenience stores before daybreak when average consumers will start buying.

Now these tips are posted on numerous web sites soon after the new packs hit the shelves. These web sites post detailed photos highlighting and describing minute differences in packaging such as the length of the ridges along the back of the card pack, or slight differences in printing angle and hue.

Single cards, often purchased in these ways, are sold at card shops and on the Internet. The total volume of these kinds of exchanges is extremely large. One collector I spoke to said that he purchases about 600 packs of cards in each round of searches and could easily make his living buying and selling Yugioh cards.

Konami has been rumored to have tried, unsuccessfully, to pressure some card shops to stop the sale of single cards. They have also tried to exclude the members of at least one

core gaming team from the official tournaments. Konami makes their business out of selling card packs to regular consumers in mainstream distribution channels. They also are working to police the boundary between children and adult culture, promoting an image of Yugioh as designed for "regular kids" and tournaments as contexts that any average child could participate in.

At the same time, Konami plays to multiple markets by mobilizing mass-oriented strategies as well as fodder for core gamers. They have both an official and unofficial backchannel discourse. They continue to generate buzz and insider knowledge through an increasingly intricate and ever-changing set of rules and the release of special edition cards and card packs.

Another area where fans appropriate and reshape content as well as the commodity relations is in the production of fan zines. This is not restricted to media mix content like Yugioh. Unlike the card trading communities, fan zine groups, even those associated with boys content, tend to be dominated by girls and women. These kinds of glossy publications are sold at the Internet and at trade shows like the Comic Market devoted to fan produced content. The Comic Market is the largest convention in Japan, bringing together 300,000 fans twice a year.

More striking than the orderly rows of booths selling doujinshi are the cosplay (costume play) participants, decked out with wigs, plastic space suits, and other trappings of their favorite manga and anime characters. Doujinshi, video game, and anime events are all occasions for cosplayers to strut their stuff, striking poses for conventioners toting professional camera equipment specifically for cosplay shots. The cosplayers are like Digimon and Pocket Monsters warping into our real world, colorful but routine additions to every manga and anime related event.

Cultural Politics of Media Mixed Childhoods

Media mix content is becoming organized into a dual structure, where there are mainstream, mass distribution channels which market and sell to run of the mill consumers, and an intermediary zone which blurs the distinction between production and consumption, fueled by the Internet and otaku groups. In this extremely complex set of media environments and markets, we are seeing new kinds of contact zones, tensions, and cultural politics.

The cultural establishment, represented by the voices of parents and educators, and Konami's official marketing discourse, maintains a boundary between the sanctioned

engagement with Yugioh content by children and certain unsanctioned forms of engagement with Yugioh content by adult core gamers and collectors. It is clear that the legitimate place for children's entertainment is in the home, under the surveillance of parents, and that the legitimate economic relation is one of standardized commodity relations, distributed through mainstream channels such as convenience and toy stores.

After they became popular, adults have been increasingly setting limits and boundaries to children's transactions around Yugioh. Yugioh cards are generally banned from most schools and after school centers because they cause problems when cards are stolen or traded among children. Parents have often found that they have had to intervene.

The actual difficulties in maintaining these separations in the flow of cards points to what I see as one of the defining dynamics of media mix content. On one hand, the content of the media and the official discourse of childhood see children as inhabiting a uniquely defined social, subjective, and cultural space. But the realities of on-the-ground play and exchange means that there is more and more interaction between children and adult otaku.

Children traffic in the same sorts of knowledge and objects as the peer-to-peer otaku networks, although their rumor mill is not as well informed. All of the children who I spoke to about it had heard of search techniques, and some even had some half-baked ideas of how it was done. Many children had visited card shops or looked at card prices on the Internet, though none were active brokers beyond their immediate peer networks. All traded cards among friends, and often looked to otaku web sites to determine value.

I still have David Buckingham's cautions about rhetorics of "a digital generation" ringing in my ears, so I don't want to be too glib in proclaiming a definitive shift in modes of cultural production and consumption. But I am hoping you might, at this point in my presentation, forgive me if I exhibit more structure than agency and my intellectual and perhaps even generational roots in the earnest futurology of Silicon Valley of the nineties. Or perhaps, more accurately, I'll display my hybrid cultural allegiances to US digerati discourses and the peculiar techno fetishisms of post-bubble economy urban Japan.

Now generation media mix is not quite Don Tapscott's net generation, but it does represent I believe a historically specific set of experiences that are distinctive in their technological, cultural, and social make-up. These are changes that clearly grow out of prior forms of media

engagement, and are situated in a much broader set of social, cultural, and economic shifts. But new media technologies, particular digital forms of game play and Internet exchange, are also integral to these shifts.

I would suggest, first, that portable consumer technologies have interacted with urban ecologies and practices in Japan to define a more pervasive presence of media in everyday life as people carry their mobile phones, Internet connections, trading cards, and other media icons outside of the settings of the home and school and workplace. Children in Japan spend more and more time outside of the home, for play as well as for education, commuting on public transportation to schools, cram schools, and extracurricular activities. These in-between spaces are now occupied with media engagements of various kinds.

I would also suggest that media mixes such as Pokemon and Yugioh are tied to a changing politics of childhood. I think part of the appeal of these media mixes for children and young adults is that it explicitly recognizes entrepreneurism and connoisseurship in children's culture, traits that, by some cultural standards, are not considered appropriate for children. In part, these media mixes are becoming ambassadors for a Japanese vision of childhood internationally.

This is a vision of childhood that is still clearly demarcated as childlike and is often unabashedly cute in ways that scholars such as Sharon Kinsella and Anne Allison have been tracking. But in some ways this vision is less innocent than its Euro-American counterparts, often sexualized and precocious in its moral and social awareness. It also has become a kind of social identification for adults that resists mainstream logics of work, responsibility and achievement. I am not saying that somehow this Japanese version is entirely culturally distinctive -- rather it builds on media forms and genres that were developed in the US and elsewhere, and inflects them in culturally specific ways. Contemporary children's animation is something that has been produced through a transnational process through the years.

So one important broader context of change is the transnationalization of media exchange that has been happening for some time. By this I mean a transnational mainstream commodity markets as well as the subcultural arenas of cultural exchange enabled through the Internet. Now Americans can buy Japanese Yugioh cards through ebay and vice versa, and an active fansub (amateur subtitling) and scanlation (manga translation) community makes Japanese content available overseas before official release.

Within this transnational arena, Japan's position has shifted considerably in the past decade. In the 70s and 80s, Japan was defined as an international exporter of electronics, the hardware for transnational media industries. By contrast, the latter half of the nineties has seen a rise in what Douglas McGray has called Japan's "gross national cool" and others have tied to a resurgent Japanese techno-nationalism. This is a reference to the growing international export of Japanese cultural products such as music, anime, and computer games.

A transnational market in children's culture means that different visions of childhood with different cultural valences are being exported abroad. We certainly saw this with the international spread of US children's media. Now Japanese versions are entering this arena. While much scholarly attention has been trained on shifting boundaries between children and adult cultures, I would suggest that the boundaries between different national children's cultures are also an important site for scholarly work that has received considerably less attention.

Amateur Cultural Production

I'd like, in conclusion, to speak with a little bit more hyperbole on how the media mix case relates to broader shifts in digital culture and changing relations of production and consumption. So now you will witness the more Californian part of my intellectual baggage really shine through. And here I am shifting from a primarily descriptive orientation to a somewhat more proscriptive one and one with particular political stakes. What I am trying to do, in part, is to legitimize certain forms of knowledge and cultural production that have been systematically marginalized by the linked institutions of commodity capitalism and institutionalized education.

Part of the reason why children are so animated around Yugioh content is because it represents this more agentive view of childhood and provides a space for children to learn and gain expertises in a peer learning community that is not being evaluated by the standards of adults who have power over them. Adults who participate in this culture engage with children as equals at the duel table. Age does not automatically correlate with power or expertise, and I often saw instances of elementary school kids beating adults. Like what you see on the Internet, these gaming and fan cultures are intergenerational learning communities that are reliant on large institutionalized media producers, but are not governed by them.

What I want to call out is the identities and practice of amateur cultural production that is built through these

intermediary zones. Amateur cultural production, like what you see with Yugioh fans, what you've seen with fan zines for some time, is built through an appropriation and reshaping of knowledge and culture produced at influential sites of global cultural production. The learning happens through engagement with these global forms, but also, importantly, through local engagement with informed peers. What is important, is that this is not the casual engagement of an everyday consumer, but a much deeper form of engagement that produces alternative forms of knowledge and unique social networks and practices. In other words, these are expert communities even though they are not professionalized ones.

If we are to place these amateur practices along a global local scale which contrasts large scale cultural production and individual-scale cultural consumption, we can see that they lie in the intermediary zone that we might call a community scale of interaction. Cultural content is being exchanged and engaged with at a scale that is larger than intimate and personal communication, but not at the scale of mass media transmission. This is the scale of perhaps a dozen to several hundred people where there is some kind of named relation between participants, and natural leadership and community exchange. So it is not faceless exchange like what you get through commodities and textbooks, but more like the exchange you would get among hobby groups and local communities.

Fan level exchange and certainly community level exchange is not new, but digital networks are making it more prevalent due to ease of publication and distribution. I don't have time to present any more actual cases, but I do want to point out that this trend toward electronic knowledge communities is not restricted to media mixes and fan groups.

I know there are others here who can speak to these areas better than I can, but I want to just suggest some possible linkages. One long-standing area of amateur knowledge exchange and production is game hacking and mod construction. Another more recent area is in the blogosphere, where we are seeing interesting trends towards meso-level blogs with a modest number of incoming links. These blogs are different from the vast majority of personal, intimate scale blogs with four incoming links, as well as from the more professionalized and authoritative blogs like slashdot or blogs by mainstream journalists which are meant for mass consumption.

In the mobile space, there is comparatively little support for these kinds of mid-level communal forms of social organization and exchange. By far the vast majority of mobile email traffic is, like with blogs, between 2-5 intimates, what my colleagues in Japan such as Ichiro Nakajima have been calling

the "full-time intimate community." But there is a growing area of email list, what we call mail magazines, and mobile blogs, particularly camphone blogs, which suggests that there is pent-up demand for communal forms of knowledge production and exchange.

So what are the implications of these roughish amateur practices for learning in educational institutions?

If we shift from the domain of entertainment to education, many of the distinctions that distinguish cultural producers and consumers also apply to knowledge producers and consumers, what in the academy we distinguish as faculty and students or teachers and learners. The layer of amateur fan cultural production shares many structural similarities to community level learning that has been the subject of ethnographic studies of apprenticeship and other small scale learning communities. This is a layer of social organization that supports identities like the assistant, apprentice, or graduate student, people who don't occupy the professional identity category, but who still perform productive labor in that community, rather than being consumers of knowledge.

I know there has been much work to try to translate apprentice-like models of learning to institutionalized education. What I am suggesting here is that there are certain structural features in the scale of social organization and the ways in which media are utilized in these organizations that either support or work against these forms of learning. I am also think that new electronic networking media like the Internet and other peer-to-peer networks are powerful enablers of this kind of social organization, but they can't function independently of certain broader institutional structures, whether that is the structure of an educational institution or the structure of late capitalist commodity relations and media industries.

For example, the robust doujinshi community is a result of an integration range of networking technologies, certain historically rooted practices in Japanese visual culture and techno-otaku subcultures, and a looser copyright regime in Japan. Similarly, the emergent communities of graduate student blogs, which represent some of the best of amateur intellectual production, is a complex alchemy of the existing institutionalized status of graduate students in higher education, merging with the new tools of networked amateur writing and practice. I am not suggesting that blogs or Internet media distribution has somehow created these new amateur knowledge communities, but that are one necessary component of this complex alchemy.

I want to conclude with a question. How can we legitimize and assess amateur cultural production? Although this is changing with the explosion of peer-to-peer exchange markets, traditionally, it was difficult to make a living out of amateur production, so it was difficult to maintain as a full-time and long-term social identity. Amateurism, institutionally and socially is the domain for starving students, volunteers, retirees, starving artists. In other words, amateurism is often ghettoized.

How do we adapt existing institutions of learning, assessment, and reputation building to make the most of the energies and expertise cultivated in amateur knowledge communities. I don't have any answers here, but I think that what we are seeing in digital entertainment networks provides some interesting hints to how amateur knowledge can be produced, consumed, and exchanged.