SCHRÖDINGER’S CATGIRL: HOYOVERSE, CYBERNESIS, AND THE ETHNOGRAPHY OF METAVERSE

Matthew J. ADAMS

Abstract: “Metaverse” is not a Silicon Valley utopianism. It is a meaningful descriptor for an increasingly embodied and more deeply integrated internet. Nowhere is it more profound than in China, whose first forays into metaverse have sent ripples the world over. This ethnography of China-based Hoyoverse, and a subsequent discussion, suggest the meaningful contributions ethnography can make to understanding metaverse. And how metaverse will in turn transform the discipline. All of which is articulated through the example of a cyborg catgirl, who may or may not be a mirage.

Key words: metaverse, cybernetics, dividuality, ethnographic methods, psychological anthropology

1. Introducing Keqing

I enter a bright, spacious apartment. A girl with lilac hair and little cat ears looks up from behind a transparent screen. She lets go of the camera she was holding at arm’s length, raised slightly above her face. It does not fall but rests floating in place. “researchermatthew” she says, addressing me by my username, “you came”. She smiles an exaggerated, demonstrative smile, closing her over-sized, anime eyes and, turning back to the camera, she continues her talk to the chat in Cantonese. The apartment is empty save for her, the floating camera, and the transparent screen, next to which she looks diminutive, perhaps five feet tall, and behind her at a distance there appears to be a ping-pong table, where another avatar is bouncing something off of the walls. Every couple of seconds his avatar or what I presume to be a ball, as he is far enough away that it is hard to make out, will lag for a fraction of a second, disappearing in one place and appearing in another. Teleporting.

I walk over to the window at my left, as windows punctuate the white walls at several intervals. Only the far wall is distinct, floor-to-ceiling in glistening glass. I look out over a somewhat anonymous cityscape, the light of the sun bouncing between glass and chrome. I wonder if it is procedurally generated. The girl who greeted me – we will call her Keqing – continues her patter, and her coquettish, with lilting tones and a
smattering of Japanese loanwords and wasei-eigo. She laughs and smiles as she interacts with those in the chat, the other side of the transparent screen, in the ‘real world’. She talks with her hands and body and expressions as much as with her words. I know that I am perceiving her through a digital display, 120 frames flashed through my pupils at proximity every second. But, free of the apparent latency issues of her friend with the ball, she is vivid and alive – by my observation, immediately ‘real’.

2. Introduction

MiHoYo, the Chinese developers of the videogame Genshin Impact, have made explicit their goal of being a key player in the metaverse. Rebranding their flagship products ‘Hoyoverse’ in February 2022, they aim ‘to build a fantasy world for 1 billion people by 2030’. By current estimates they are approximately a quarter of the way there, with 250 million users globally (Adams, 2022). MiHoYo is now one of the largest, most profitable, and fastest growing videogame companies in the world, with major investments in videogame-adjacent technologies, such as virtual reality, human-computer interface, and AI-assisted avatar technology, which build upon their pioneering technological feats already achieved in Hoyoverse’s cross-progression2 functionality. These technologies have the potential to greatly alter human sociality.

‘Keqing’, from the vignette above, exists across the novel media spaces as a composite metaperson (after Sahlins, 2017). She is formed by the recombination of elements from fictional characters, a corporeal person tethered through motion capture and, in large part, AI. We can speak of her coherence, or ‘cybernesis’ (Adams, 2022), vertically across realms, but also within each: for instance, the coherence of metapersonal elements with those performed by other individuals, the codebase shared with other virtual YouTubers (V-tubers), and shared software. There is within-network coherence, say, in what it is to be a person on TikTok, as much as there is in what it means to embody Keqing.

Cybernesis is a term I resurrect from the Greek root of both our terms ‘cybernetic’ and the English word ‘to govern’: κυβέρνησις. I find this term uniquely useful in denoting the assimilation of partial identities that are assumed and made operable in metaverse spaces – wherein operable identity can be changed up at the click of a button. All presentations nevertheless form a component within the cybernetic formation of both the respondents’ and the ethnographer’s personhood. Likewise, we may use the term to speak of distinct forms attained by groups or networks, otherwise scale-free, that nucleate, fission, and reform within the fast-moving online environments characteristic of metaverse – almost as though altered by observation.

Herein, I present the fruits of an ongoing study of Genshin Impact, Hoyoverse, and contiguous communities on social media and beyond3. I pay special attention to novel phenomena emerging in these spaces, such as V-tuber communities and associated sociotechnologies.

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2 The ability to move data and inputs seamlessly across devices and ecosystems, e.g. Apple to Android to Windows to PlayStation.
3 Participants were primarily recruited via Reddit and Discord, TikTok, or Twitch. From a core of 300 users I conducted 26 months of digital ethnography, containing 6 months in-person fieldwork split between Hong Kong and Taiwan, using semi-structured interviews and surveys but with a focus on participant observation – be that in-person, within Hoyoverse products, within competitors’, or on other pertinent social networks.
2.1. Theoretical Orientation: Cybernetic Dividuality

Consider, a moment, a crude example of cybernetics and information theory in action. Were I to kick a cat, though, in this context, perhaps an anime catgirl is more pertinent: were I to kick a catgirl, I would transfer information in the form of kinetic energy thereto, a message received by, and directly productive of responses in, her skin and nervous tissue (or haptic devices), likely leading to her displacement a way off. Within our society as a whole, while hopefully we do not all go around kicking catgirls, aggregation of such interactions would produce characteristics of the interactive system. In this case, perhaps a feuding culture. Epidemiology, karma, and social contagions – eg. emotions, ‘going viral’ – can all be understood in the same terms. As can internal thermal regulation, say, of our bodies or within our phones.

The concept that personhood itself may have an ‘empty centre’ is not at all new to anthropology (cf. Leenhardt, 1947). But Strathern (1988) and others have shown that the error was conceiving of a centre at all. In doing so, she moved the anthropological discussion of personhood far closer to Lacanian psychoanalysis, in its explicitly cybernetic logic (Lacan, 1978), and so greatly advanced the project begun far earlier by Bateson and Mead (Bale, 1996). Strathern would present a conception of the (in)dividual as wholly produced by exchange. It is not that an a priori ‘ego’ is affirmed by exchange: it is itself emergent therefrom. That ‘ego’ is thus dividual in the sense that its properties are conferred by cybernesis within each network system in which it acts.

2.2. Theoretical Orientation: The Mirror Phase

If we parse this with psychoanalytic and anthropological literature on alterity, we see how functional distinctions and thus ‘roles’ arise naturally from the flow of information around social systems, eg. giver:receiver, kicker:kicked, oppressor:oppressed. The higher the intensity and velocity of exchanges, the greater the complexity of roles and the greater density of information on what is required ‘mentally’, as we might understand it; the more a person is required to be and do beyond the earliest archetypes, eg. mother, father, sibling, provider of a given service. Lacan described the production of an ‘individual’ selfhood – though without centre – as emergent from interaction with the Other, including one’s self-representations and ascribed roles: the Lacanian ‘lack’ would be equivalent to a fantasy of cybernetic wholeness. In a ‘mirror stage’, the subject is formed by identification with an abstracted representation of ‘Self’ to which they can say: ‘that is me’, cataphorically.

Among my participants in Hoyoverse there was the ubiquitous conflation of ‘me’ and ‘Other’. Within the same sentence pronouns would slip from ‘I’ to ‘he/she’, among multiple avatar bodies. This also extends a fantasy of wholeness: that is ‘me’ over there, this here too is also ‘me’. One can see one’s own personhood in an avatar actively being controlled by another, or to some degree inanimate, eg. on someone else’s account, in someone else’s ‘edit’ or cosplay on TikTok, say, or in AR community events. One simultaneously identifies that part of oneself as Other, where users would describe unironically ‘simping’ for their chosen character (whom they were at that moment
embodying), sexualising and desiring them – inferring sexual submissiveness towards them – but still using ‘I’ in referring thereto. Of course, in a gameworld there is the transposition of spatial awareness onto the avatar, locomotion achieved by proxy through a controller, touchscreen, or VR. But at the same time players would continue to embody and discuss the characters over Discord and other social networks, perhaps using their face in a display picture – with a small subset then going so far as to create or share hentai pornography featuring those avatars whom they still denoted as ‘me’.

2.3. Theoretical Orientation: Superposition

It may be helpful for a reader uninitiated in some of the newer technologies referenced herein, to draw from established concepts in the anthropological literature. Many of those most pertinent have their origin in the Melanesian imaginary, for instance: the fractal reproduction of kinship, whereby the ‘Self’, through relations, is reproduced recursively (Strathern, 2011). This is elegantly explained by cybernetic logic. As too the transference of personhood to peccaries, say, as de Castro (2013) showed the shifting boundary to the person as ‘soul’, extending outwards, forwards and backwards in time, intergenerationally, and across the species line. The immortal person can be divided, say, among ‘dividual animals’ (Vilaça, 2011, p. 455). The zoomorphic familiars and zoomorphised faces and bodies of many of the avatars described herein have clear analogues in more traditional anthropology. Cybernetically, the transference of qualities, eg. the ears, eyes, tail, and tongue of a kawaii cat, to a girl who too wishes to be kawaii, is intuitive. We are not just discussing cyberesis of the augmented body, ie. body plus phone and VR headset, and frame or voice generation AI, but a cyberesis of ‘soul’. Is she e-girl? Is she AI? The contradictory subjectivities allowed by a Lacanian perspective allow persons to exist as multitudes in superposition (Newman, 2004).

3. Observation

3.1. Individual Cyberesis and disciplines unlocked

On a fundamental level, experience of Hoyoverse is conditioned, it is disciplined⁴, in that it has to pass through the filter of readable inputs: ‘skills’ or commands, one’s repertoire of pre-programmed functions. This is different, say, for different avatars just within Genshin Impact: different heights, different traversal abilities. For much of the in-world ethnography I used an avatar, Kazuha, who has a unique pattern of three-dimensional locomotion, while another avatar allows movement over the surface of virtual water, say, a third offering brief levitation. These meaningfully alter the relationship of users with the geometry of a virtual world. But so too do aesthetic considerations in character design: voice-lines repeated during exploration, idle animations, outfits, et cetera, all alter the aesthetic relationship (not to mention avatars’ variable monetary value from the gacha system, cf. Adams 2022). Even the slightest

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⁴ Foucault’s (1975) discussion of disciplines is highly useful in understanding identification with avatars and their reproduction, and replication – as in the case of Keqing – at some remove from source.
elements of ‘gamefeel’ contribute to the user’s reading of the gacha character, and can alter the internalisation of performative components therein.

Where players come to identify with these characters, elements of each’s comportment are then taken out into other realms. For instance, in contiguous social spaces: performances are replicated on TikTok, where people make edits of their ‘main’, or in cosplay, players – though not only, for many in the extended community have no direct link to the gameworld – use that character’s face as their display picture on Discord, and perhaps a quotation of theirs in their tagline. I consider replication, often at a remove from core Hoyoverse, as Foucault’s (1975) “disciplines unlocked“. Where in turn applying a Lacanian lens thereupon, the ability in a gacha game, or in any metaverse environment – say on a VRChat server, where one can quickly change selection of one’s active avatar for models from Hoyoverse– the ‘individual’s’ cybernesis consumes a vast tapestry of partially contradicting subjectivities.

3.2. Network Cybernesis, Hexis, and Jouissance

But that is cybernesis of the ‘individual’, not the network. What punctuates and orders the shared experience, and habitus, of participation in Hoyoverse is then a little more fundamental. It is sonic, it is subliminal. Accrual of resources and currency, completing daily tasks, having players ask to join your world: each is accompanied by animations, and sounds. Green for ‘yes’, red for ‘no’. If another user disturbs the ground nearby you will feel it in your palms through basic haptic feedback. We are well familiar with how such systems create tactile feedback loops: we type a message to a friend, perhaps on a touchscreen that pushes back a little on each keystroke. We get a little sound and something vibrates in our pocket. In a groupchat, as on the Discord servers in which a majority of my respondents’ experience of Hoyoverse was forever embedded, there may be a flurry around a funny video or image, with activity among players distributed across 4 servers, and 20 timezones. But simultaneously, each would feel the vibration, receive and perhaps share some iconic representation of the appropriate emotion, and peer through the same window onto one’s community and gameworld. Through time, this standardised the framing of events in the component worlds of Hoyoverse, each with major additions to in-game activities, narratives, and news on a weekly basis, with consistent interaction across platforms via the ‘HoYoLab’ social network and beyond.

Together this forms a shared hexis that I believe to be the root of both ‘(in)dividual’ and wider community cybernesis. (That is, vertically, coherence of the player; horizontally, coherence of the community). You need not use my terms, so long as these two dimensions of coherence, ie. consolidation of parts that would appear distinct wholes at other levels of analysis into an identifiable (whole) form, make some sense.

Likewise on contiguous media: from the most banal to the most profound, exchanges would routinely be interrupted by notifications. On Discord, a friendly chatbot chips in to say ‘noName55 has levelled up!’ While most users appeared to ignore these most of the time, it was a rhythmic reminder of the permeation of gamified and transactional logic into the fabric of social life. In livestreams, consider perhaps how social credit earned buying favours from the V-tuber, represented by the level and, in many cases,
transferable for not just prestige but for services, could be considered a literal manifestation of Lyotard’s (1970) libidinal economy. That or Lacan’s jouissance at social scale (cf. Dimitriadis, 2017), and the psychosexual content to each exchange is rarely disguised at all. In the extract from my fieldnotes that began this article, it is possible to reach out and touch an idol born straight from fantasy.

Among Hoyoverse’s V-tuber communities, I discovered that the line between normal social interaction and paid entertainment content is not so much blurred as obliterated. Indeed, occasionally this veers into transactional voyeuristic and sexual fantasy (‘pay to stroke me’, ‘I will pay for the best hentai of me’). In a small chat, and at any moment there may be many thousands of such chats open with only a host and a couple participants, there is essentially just the streamer – perhaps they are streaming a game or there just to talk – and an ostensibly uncapped number of viewers who can comment and interact through multiple avenues. I focus on the V-tubers as opposed to the far greater number of livestreamers because the former do not use video of their ‘real’ face, at least not directly, but an amalgam of their physical form and the digital. The most sophisticated of these, with whom I have spent the most time, use AI-assisted contextual controls and animations as well as motion capture. This is young technology and widely democratic – a lower budget version is the so-called ‘PNG-tuber’ that may only have a few distinct frames or just the one, ie. they stream as a static or otherwise minimally animated avatar in the visual style of Hoyoverse and progenitors.

Above I glossed ‘metaverse’ as a ‘continuity’. To substantiate this, I wish to stress that in Hoyoverse, the interactions that are taking place within the gameworld are not bracketed at any one layer in any metaphorical ‘stack’. Streamers instanced the gameworld and social spaces perhaps conically: VRChat nested within Twitch, or YouTube, viewed in Discord. But they were also talking to me. These apparently concentric spaces, tethered by the gameworld, have additional participants in each tier, perhaps experiencing contradictory ‘stacks’. Many of Hoyoverse’s weekly events actually send players out into social media, linking directly from within the game client, to carry out work. Often this entails simply publicising the game, or watching some marketing, but equally often entails playing some minigame in their browser, wherein the sounds and aesthetics of the gameworld are brought out into ‘realspace’ of some form or other (eg. YouTube), replete with the conditioning sounds one hears on accruing in-world resources – though nominally ‘outside’ the gameworld. (A complete topology of ‘Hoyoverse’ and its community would appreciate the role of these spaces and their interstices, as I have begun to provide for Genshin Impact in Adams 2022). More of a Möbius strip than a stack then, perhaps?

3.3. Schrödinger’s Catgirls and the destruction principle

The utility of Schrödinger is then not the metaphor of a catgirl who is both dead and alive, but in superposition with the multiple viable cybernetic forms in which she exists. There is decoherence from the wave function both of the (in)dividual and at a network level. Catgirl Keqing is the cybernetic personhood of the streamer, vertically, but also the cybernesis of the gacha character Keqing as a metaperson, and of both horizontally
within the community of Genshin Impact and wider Hoyoverse. To borrow from another famous physicist, Niels Bohr: in most forms of analysis, discourse included, we use an Abtötungsprinzip ‘destruction principle’ (Jackson, 1989) – dialectic logics of the matter:antimatter variety. We cannot concurrently consider Keqing to be two or more of the ‘cyborgs’ proposed here. But Lacanian discourse analysis (Neill, 2013), has no such qualms. Competing master signifiers, eg. the network and the (in)dividual, cancel for different discourses. But to understand the fluid interactions within metaverse, and the complex and often contradictory subjectivities engendered thereby, we must suspend such dialectic destruction. Good ethnography of metaverse will allow for concurrent discussion of the same elements as overlapping parts and wholes in superposition.

4. Analysis

4.1. Weishidai and the Hyperreal

Consider then affordances for the production and reproduction of subjectivities within the greater Hoyoverse. Consider presentations of a character like Keqing, on TikTok, or as more nuanced components within the self-presentations of users who have internalised related disciplines during their time in the gameworld – mannerisms, turns of phrase, aesthetic dispositions – either through shared hexis or whole steps removed. In a discussion of “contemporary China’s postdigital media ecologies”, de Seta (2015) employs the Chinese term 微时代 weishidai, or ‘micro-era’, to indicate ‘the historical moment in which the Internet, fragmented, ubiquitous, and personalised, disappears in the fabric of everyday life.’ The ‘focal device’, typically the computer or mobile phone, but also the VR headset, is an aperture of vanishing interference where the gacha characters, the avatars, the metapersons themselves become the foci. Internet all but disappears from the interaction itself, and here in the reproduction of subjectivity.

Short-form video apps, such as TikTok/Douyin, and the rise of livestreaming globally mean that in our person-to-person, person-to-business, and even business-to-business interactions online attention is directed quite seamlessly to other persons, of whatever subvariety. The devices disappear before the content we wish to see, to our reflexive presentations of ourselves: our own personhood, our culture, our work, and our environment. Metaverse becomes increasingly life-like, increasingly real. Arguably more so, hyperreal, in that where ‘Keqing’ is our master signifier, other elements in the stack become subordinated and componential, even invisible. Ethnographers of metaverse can still draw attention to subcomponents within the stack – or Möbius strip – but this is absolutely not to effect some form of Bohr’s Abtötungsprinzip. The immediately apparent, surface-level presentation, the simulacrum and the simulation (to continue to invoke Baudrillard, 1984), is of proximate and paramount importance. And it is on this level or equivalent that the ethnography of metaverse ought to tether.

But first to a practical ramification: the disappearing division between work and play (cf. Adams, 2022). This was touched upon above in terms of Hoyoverse events that outsource work to users for in-world rewards and social credit or cachet. Yet players also create fanart, for instance, which they are encouraged to share on HoYoLab, on official
Instagram and Twitter, with popular pieces being picked up by the developers and integrated into marketing. Where these then inevitably evolve the performance of each of the game’s characters (as metapersons), the transference of community and developers articulates across official:unofficial boundaries in Hoyoverse and contiguous social spaces. Through this feedback mechanism the community and developers co-construct the gameworld, its story, and the gacha metapersons and, indeed, ‘the community’ and ‘the developers’ themselves.

Likewise, if there is an aspect of another (in)dividual’s identity one wishes to emulate, one can copy it, maybe purchase it, wholesale – assisted by AI voice cloning, deepfakes, and image and video generation. Is there a fictional character you like? A celebrity? Here is a kit to have their body, their voice. You can then have their clothes and hair delivered to your home with same day delivery, ie. in cosplay kits. Through the new internet we can better become the images of those we idolise, our avatars, much as we become our own image (again, Baudrillard, 1984): we can become fantasies.

4.2. Performative Guardrails

But what kinds of fantasy, or persons? To borrow a neologism from the eminent video essay on the topic of Genshin Impact, with ca. 2 million views, by YouTuber @NeverKnowsBest: a guiding aesthetic consideration in Hoyoverse is ‘idyllicism’. This is a concept I would extend to the particularities of the worldview carved out in Hoyoverse’s algorithmic niche on platforms TikTok/Douyin, Instagram Reels, YouTube Shorts, Facebook TV, WeChat Moments, et cetera. Every character is a paragon of earnestness and sincerity, each presents a personal parable representing an aspirational ideal: be it loyalty, congeniality, erudition, humility, hard-work. As an aesthetic conceit, this is telling: Genshin allows the adoption of archetypes as avatars and ultimately as components in one’s self-construal of identity, in a manner that supports the ‘neosocialist’ freedom from choice (described in Schein, 2002; Adams, 2022).

Unlike some competitors, eg. Mainland Chinese Dragon Raja or Korean MMORPGs like Black Desert, one does not have absolute freedom to construct one’s identity. One chooses within performative guardrails, which nudge towards the sort of moral and aesthetic dispositions befitting 正能量 zheng nengliang, or ‘#PositiveEnergy’ (Chen et al., 2021). It is a meaningful step towards codification and standardisation of identity formation in metaverse, which could otherwise become a hyperreal free-for-all, even a moratorium on identity.

Hoyoverse, and a Chinese metaverse in general, may align with President Xi’s directive for the ‘purification of cyberspace’ and the creation of a cyber society that is also a ‘command moral economy’ (Adams, 2022). I gloss this phenomenon with the portmanteau ‘neosocialism’, from ‘socialism with Chinese characteristics for the new era’ in Xi Jinping Thought. Gerda Wielander has suggested that campaigns of #PositiveEnergy, that nudge algorithmic niches on mass social media platforms like Douyin towards what I term ‘neosocialist’ presentations, are sublimations of the all but deified ‘revolutionary spirit’ that has carried the Chinese Communist Party (CCP) and its state-building projects heretofore. But given that Hoyoverse’s products, both
within the PRC and in their international distribution, adopt a strict isomorphism (one brief exception to follow), the mores of neosocialist China will be significant for metaverse globally: recall that Hoyoverse has 250 million users, aiming for a billion this decade.

The exception to this policy of isomorphism has been a reluctance to roll back anything already coded into flagship products, ie. having already passed censorship both formal and informal in the PRC prior. As the CCP has overseen trends restricting certain presentations of gender or sexuality online, and a clamping down on the donation-based ‘simping’ economy that would support communities like V-tubers and other Hoyoverse influencers in China, the developers proactively removed some more revealing outfits for Genshin avatars in favour of more modest ones. Though the former are still available to those outside Mainland China. Note that these changes do have significance: after a similar change to outfits for Honkai Impact, a disgruntled player attempted to assassinate one of the designers. The change gave one of the catgirls a bunny outfit, as I recall. Clearly interfering directly within users’ self-representations, arguably on an intrapsychic level as Hoyoverse does, can generate significant meaning.

In Lacan’s discourse of the capitalist (Vanhuele, 2016), he describes the production of new meaning through the consumption of old ones – a circular and runaway function. It is here that he meets Baudrillard’s ‘hyperreal’, and in large part this is the function that the Chinese state is attempting to control. To prevent runaway feedback loops that generate wholly new or disruptive emotions, attitudes, or roles – to offer cybernetic bedrock – they start with aesthetics. The narrative and values modelled by in-world characters and their metapersonal incarnations beyond – whom people can embody, whom they can live as – are hugely important. They reflect real-world values of the PRC and MiHoYo, of their global userbase, and the transference there between.

There is a part: whole metonymic effect at each stage, described but in no way ‘destroyed’ by cybernesis. Performance in-world and beyond reshapes the disparate communities that form the greater Hoyoverse – ie. including non-users. Simultaneous cross-sex and same-sex roleplaying, and courting, is just one example of how contradictory subjectivities can destabilise established social categories. And the action of such destabilisation takes place on the physical end of metaverse. The catgirls escape out into quotidian reality, into everyday self-representations. To embellish Baudrillard (1984): ‘we become simulations of our metaverse selves’. The constructions are bivalent, and ambivalent, and only become certain on observation, on collapse by ethnography into a particular discourse.

Acknowledgements

I thank Mihai Burlacu and Attila Kovacs of Transilvania University for the excellent panel that prompted this article, and for their helpful advice. I would also like to thank the Anthropology Department at the Chinese University of Hong Kong and the Institute of Ethnology at Academia Sinica in Taiwan for helping to facilitate the research.
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