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Social Dis/Ability Model of Future One-Handed Concert Pianists

Cyborgs will eventually play professional concert piano. It is only a matter of time. In medical fields, engineers like those from MIT and John Hopkins University are separately creating nerve-interfaced prosthetics that allow tactile feedback, allowing patients to feel what their robotic arms interact with (Herr 2019) (Lunday 2018). Even for those born with two hands, exoskeletons are being developed to rehabilitate paralysis or to simply augment one's abilities (Li, Min, et al 2019). A more futuristic technology is manifested in *Terminator 2: Judgement Day (1991)*. The film presents an antagonist android, T-1000, made out of shape-shifting liquid metal that can take on various forms (Cameron 2003). This might not even be too distant of a future, as my PhD research in Soft Haptics explores how this could be achieved using a fusion of robotics and materials science. These technologies will penetrate the concert pianist community, most likely beginning with one-handed concert pianists. As discussed later, many of them seek to regaining two-handed performance abilities due to the disability hostile concert piano environment. There will eventually be a paradigm shift in concert piano where cyborg pianists exceed the capabilities of existing pianists, normalizing them. Consequently, musical philosophical discussion will involve new opportunities to evaluate a more inclusive social disability model for not only pianists with disabilities (PWD), but also technologically aided individuals and communities.

The present reality is that concert piano, especially for classical Western music community, marginalizes and socially impair one-handed pianists. Ideally, as Small argues, any form of music should be embraced, including one-handed music, as he sees no prescribe metrics in the value of music (1998, 9). However, most classical piano concerts require two hands for any solo performance, leaving one-handed pianists to rely on orchestral accompaniment when performing (Lubet, 33). One-handed pianists, especially those before becoming one-handed, stay with this hostile community nonetheless seemingly due to the societal status that they can gain for being part of it. Indeed, both Lubet and Small identify high privilege, standardization, elitism in classical Western music (Lubet 20) (Small 3). Specifically, Lubet attributes this to centuries of quasi-Biblical, fundamentalist, literal social construction of the canonic literature of Western classical music that confluentially amputates musicians (39). Despite the efforts in disability studies to detach music from such social stigma, the

trend is still largely perpetuated. Therefore, there needs to be more societal push for recognizing the established social construct and detaching music away from it.

Technological approach to solving disabilities is oftentimes disproportionately invested over social approach. To illustrate this tendency, simply imagine local citizens funding rehabilitation programs for paralyzed walkers, rather than voting to pass laws that enforce construction of barrier-free infrastructure across their town. Some may assume that my notion of cyborg pianist is following a techno-optimist narrative. However, under a technological innovation significant enough to make PWD outperform nondisabled pianists, discussions of societal implications inherently arise, leaving to our decision to take part in such conversation or not. This opportunity would greatly add to present discussion of social support for PWD.

Granted, Lubet notably argues that it is better to support people with disabilities (PWD) to create innovative music and community based on their uniqueness rather than to technologically accommodate them into disability-hostile classical music community (Lubet, 41). To counter this, Jorgensen would actually argue for a middle ground, applying dialectical thinking applied to current status of musicians with disabilities (13). Where her thesis would be to medically rehabilitate and augment musician's performance, her antithesis would be to help them thrive as musician with disability and make their own music and community. As a synthesis, she would suggest the musicians to do both at the same time.

The key discussion points, in order are: Would hand-less pianists wearing prosthetics be perceived as superior to those who do not? Would pianists start wearing exoskeletons on their hands to play faster? Would pianists ultimately replace their hands with prosthetics?

Responding to the first question, consider the current nature of disability involving one-handed pianists. The disability context I am considering is hand paralysis and hand loss, both congenital and acquired, and the social impairment that are caused by them. These are conditions seen in what could be perhaps millions of people around the world, as suggested from U.S. Statistics ("Statistics on Hand and Arm Loss." 2014). Lubet gives experiences of one-handed pianists as examples of identities transformed by social confluence (Lubet, 14). Some were congenitally one-handed, while others were afflicted with hand paralysis or amputation throughout their lives (Lubet, 14). In particular, he focused on Gary Graffman (1928-) and Leon Fleischer (1928-) who suffered from focal dystonia (Lubet, 15). Note that Fleischer's affliction was more general, whereas Graffman's seems to occur only when he plays the piano (Lubet, 17). Fleischer, in particular, has suffered from long depression and even suicide ideation (Lubet, 38).

Lubet notes that Graffman and Fleisher were forced to diversify their musical activities after developing focal dystonia, as classical music community deemed them to be useless in performing most piano repertoires (Lubet, 17, 18). He believes that classical musicians frame their experiences into a tragic-triumphant narrative that the disability studies community disapproves of (Lubet, 17). As such, he argues that in addition to their disabilities, they are inflicted with socially constructed impairments, shaping their identity and their activities (Lubet, 18). One could speculate how many would-have-been concert pianists decided not to pursue the career precisely due to such social barriers.

As discussed before, Small and Lubet both identify high privilege, standardization, elitism in classical Western music. If prosthetics are naively adopted by PWDs, a new power relationship may form between those that benefit from prosthetics and those that do not. In particular, Small criticizes concert life as it assumes not everyone is equally musically talented and deserve rights for musicality (Small 8). His comment can be extended to PWD so long as they have any capacity to take part in musical concert (Small, 9, 13). Using Small's definition of musicking, preparing a prosthetic for concert piano would be part of musicking, which indeed makes it likely for prosthetics to become manipulated as a tool for musical superiority (Small, 9, 10). Ideally, as Jorgensen would emphasize, both pianists and audience should understand the importance of anyone in participating in music as a practical activity, experience, and even agency, as demonstrated by (86, 88) present-day one handed concert pianist, Nicholas McCarthy (Jackson 2012).

Where is the social stigma against musicians with disabilities coming from? Lubet is interested in how disability identity is socially constructed within musical institutions, as it reveals the nature of both identity and social organization (4). He sees identities in terms of social confluence, or very environment-dependent, contrasting with Small's assumption that musicking is fundamental for everyone (Lubet 1). Furthermore, based on his personal experience in seeking disability accommodation in work, ADA represents society's normative interpretations of PWD (Lubet, 21). For example ADA law makers put much more emphasis on walking as a major life activity, regardless of it affecting a musician's performance ability or not, therefore excluding musicians (Lubet, 21). However, he believes that more significantly, the audience's perception of musicians disabilities creates societal expectations that could influence the nature of the musicians' musical work, as in line with Small's notion about audience being part of musicking (Lubet, 32). Elliot would also be concerned about audience-driven influences, as he believes that the nature and significance of music comes partly from listenership (7). The idea of audience-driven impairment could also lead to a separate discussion in lookism,

where classical musical communities hiding a musician's disabilities during his concert, perhaps due to certain normative beauty standards, might come into question (Lubet, 31).

With such discussion in mind, we move on to answering the next naturally arising question: Would pianists start wearing exoskeletons on their hands to play faster? It would certainly push their musical capabilities to new heights. Considering how music is physically embodied in those who musick, aiding oneself with technology will by definition add value to any existing musical values that one has had. The implication of this is a formation of new music community that is characterized effectively as a group of cyborg pianists including perhaps those that are traditionally labeled as PWD or non-PWD. Subconsciously, members of that community might perceive the non technologically-aided community, again including PWD or non-PWD, as less privileged and even marginalized like current PWD. With certainty, such attitude must be avoided both by the concert pianists and their audiences, at least in the mind of some musical philosophers. Even for those that argue for embodied music such as Dalcroze, as seen shortly, new model of music might have to be conceived.

As we discussed the nearer future implications, now we move to a more distant one: Would pianists ultimately replace their hands with prosthetics? The idea of replacing one's body part is already being ethically explored by some of the prosthetics-using community members (Sprenger 2018). Furthermore, Dalcroze argues that music making is embodied, suggesting that limb-less musicians less musickable may have less musical talent (Westerlund and Juntunen 2005). In fact, Fleisher did revert two-handed piano after he recovered arguably because otherwise he could not manage a full recital by himself (Lubet, 33). This suggests that using prosthetic hands that could perform better than biological ones allows musicians to create unique works and communities, complementing Jorgensen's idea that medical solutions can also support musicians in ways that Lubet envisions. As a real-life example, although not a pianist, there is a prosthetic that allows a drummer to hit drums in rhythmic patterns that performers can otherwise never produce ("Prosthetic Drummer: Jason Barnes." 2014). Prosthetics not only helped him regain some of his original functions but extended certain drumming skills. Lubet warns of rising frequency in performance injuries, given the increasingly digitized society that pressures artists to perform like perfect digitally edited songs, further encouraging the adoption of prosthetics (Lubet, 33).

This leads to the discussion of how tech-driven paradigm shift in social disability model would proceed. Pianists might replace their hands with advanced prosthetics to avoid performance injuries, a common occurrence in the world of classical orchestra (Lubet, 23). Small also acknowledges such harsh nature of orchestral concert, describing the blue-collar, craftsmanly nature of orchestral careers (Lubet, 23). More

interestingly pianists might simply use these technologies to seek new ways of creating music. Beauty standards on how the augmented hand (or lack of) is presented, as mentioned before, might be reevaluated. For instance, should a prosthetic hand look indistinguishable from real hand? This might change the classical music communities attitude on rather limbless-ness should be hidden or shown in orchestral concert. Note that there could be a simpler approach to this discussion.

The most important observation here is that these discussion points are relevant to pianist regardless of having disabilities or not. This is probably due to the assumption that pianists that outperforms others using technology will form their own community, separate from mainstream classical pianist, or the one-handed pianists. This, in itself, seems to be a natural process of musicking being continuously explored, developed, and understood, as Small considered in answering the significance of music for humanity (2). Furthermore, Luby believes that the differing ways society categorize their people will have far-reaching consequences on their legal systems, citing several different countries (22). He thus encourages his fellow musicians to contribute to medical and legal systems more extensively at this point (22).

In conclusion, the notion of disability naturally arises in society, as seen from the arguments from some musical philosophers. Because of this, understanding and reevaluating social model of disability will continue to be crucial at eliminating social stigma and resulting inequality that disability creates. This is not to say that prosthetics will intensify social stigma around PWD, but to say that such technological innovation creates more opportunities for discussion. This is a responsibility not only for musicians, but also audience who are most likely unaware of their musical contribution simply by listening to and evaluating music. Hopefully, the philosophical discussion that have been simulated here in the context of PWD in tech-driven musical paradigm shift into paradigm shifts in other fields that are either witnessing or about to witness disruption from technologies. By actively involving philosophical as well as societal discussions not just in musical context but also elsewhere, society could cater to people's needs and aspirations more unconditionally, bringing us closer our ideal vision of society. What makes disabilities studies relevant for a wide audience is that it's concept can be applied not only to people with disabilities and more importantly how the nondisabled people treat them, but also to general power dynamics that is ingrained in society based on abilities, gender, sexuality, religion, and political values among others.

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Works Cited

- Cameron, James, director. *Terminator 2: Judgement Day*. *Terminator 2 [Videorecording]: Judgement Day*, Artisan Home Entertainment, 2003, bobcat.library.nyu.edu/.
- Elliot, David J., ed. *Praxial music education: Reflections and dialogues*. Oxford university press, 2009.
- Herr, Hugh. "This MIT Engineer Built His Own Bionic Leg." *MIT Media Lab*, MIT, 2 Dec. 2019, www.media.mit.edu/articles/this-mit-engineer-built-his-own-bionic-leg/.
- Jackson, Peter. "One-Handed Pianist Nicholas McCarthy 'an Inspiration'." *BBC News*, BBC, 15 Aug. 2012, www.bbc.com/news/uk-england-surrey-19179499.
- Jorgensen, Estelle Ruth. *Transforming music education*. Indiana University Press, 2003.
- Li, Min, et al. "An attention-controlled hand exoskeleton for the rehabilitation of finger extension and flexion using a rigid-soft combined mechanism." *Frontiers in neurorobotics* 13 (2019): 34.
- Lubet, Alex. *Music, disability, and society*. Temple University Press, 2011.
- Lunday, Amy. "Bringing a Human Touch to Modern Prosthetics." *The Hub*, Johns Hopkins University, 20 June 2018, hub.jhu.edu/2018/06/20/e-dermis-prosthetic-sense-of-touch/.
- "Prosthetic Drummer: Jason Barnes." *Queen Elizabeth Prize for Engineering*, Queen Elizabeth Prize for Engineering Foundation, 1 Apr. 2014, qeprize.org/news/prosthetic-drummer.
- Small, Christopher. *Musicking: The meanings of performing and listening*. Wesleyan University Press, 1998.
- Sprenger, Richard, et al. "Beyond Bionics: How the Future of Prosthetics Is Redefining Humanity – Video." *The Guardian*, Guardian News and Media, 26 June 2018, www.theguardian.com/world/video/2018/jun/26/beyond-bionics-how-the-future-of-prosthetics-is-redefining-humanity-video.
- "Statistics on Hand and Arm Loss." *ISHN RSS*, ISHN, 28 Jan. 2014, www.ishn.com/articles/97844-statistics-on-hand-and-arm-loss.
- Westerlund, Heidi, and Marja-Leena Juntunen. "Music and knowledge in bodily experience." *Praxial music education: Reflections and dialogues* (2005): 112-122.