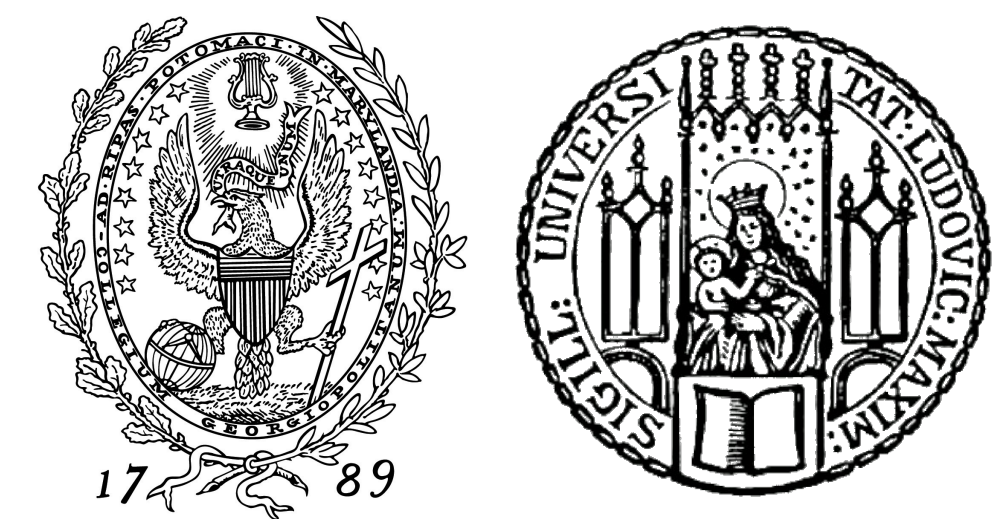


# Neurotechnology use in the Deaf community: Issues of ontology, identity, public awareness and implications for policy

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## Positive Learning Precedes Positive Change

Advancements in neurotechnology used in and by the Deaf community give rise to a number of neuroethical issues involving:

- Ontology
- Identity
- Esteem of D/deaf and hard of hearing individuals and their families

Policy must be communicated between the Deaf community and the general the public-at-large in areas concerning:

- Identification and belonging in and to the Deaf community
- Education of Deaf individuals and the general public
- Informing and formulating policy
- Guiding and governing neurotechnological research and use in the Deaf community and society at large

## Ethical Questions Ontology and Identity

The cochlear implant (CI) is the most advanced sensory neuroprosthetic, and through its use, deaf children – and adults – are enabled to hear. As well, increasing understanding of neural structure and function affords broadened opportunities to develop and use advanced neurotechnologies to affect auditory capability in d/Deaf people. Such technologies include<sup>2</sup>:

- next generation CI and cochlear nucleus transplants
- stereocilia transplants
- nVIII regeneration therapies
- neurogenetic modification

While 36 million American adults report some hearing loss<sup>2</sup>, few identify as Deaf. We posit the following terms for these variations and shifts in understanding of hearing loss and being Deaf:

<b>Deaf Dasein</b>	The phenomenological experience of being Deaf.
<b>Deaf Existenz</b>	The freedom to enjoy the authentic experience of life.
<b>Deaf Gemeinschaftsgefühl</b>	The experience of a sense of participatory engagement and actualization through alignment with the Deaf community (to reflect this existential reality <i>de communitas</i> ). <sup>3,4</sup>

## Realistic Articulation for Policy and Public Awareness

Our call for increased public awareness and more up-to-date/better informed policy can be achieved by the following:

1. Ongoing and transparent discourse between the biomedical community/social and political silos.
  - This discourse should be dialectic and leveraged to specifically increase scientific, public, and political awareness.
2. Contemporized approaches in education.
  - These approaches can and should be executed within the Deaf community, and the STEM, social sciences, and humanities communities, as well as the public at-large, to increase public awareness.
3. Full-content informed policy – can revise extant statutes affecting research, education, research, and translation of science and technology.
  - This sustains provision of goods and resources supportive of fiduciary law and law-makers.
  - Informed engagement for policy can be used to enable revision of extant statutes affecting research, education and the translation of science and technology as goods and resources supportive of the fiduciary, needs and values of the communities served.



## Conclusion

We argue for a more thorough integration of science, ethics, socio-anthropological and politico-economic studies and approaches to neuroethics by – and for – D/deaf and hard of hearing people and society as it affects and is affected by Deaf Dasein.

As such, we posit a plan for public awareness of D/deaf people and policy implication for D/deaf people, the Deaf community and bi-directional affects of neuroethics between the general public and Deaf community.

## References

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