



BACKGROUND

- Neuroaesthetics, essentially over just the past two decades, aspires to bridge art with neuroscience.
- Initial efforts aimed toward neuroscientifically understanding fundamental stimulus features defining aesthetic value (i.e., identifying a common 'aesthetic neural signature') - a Gazzaniga/Miller-style mission integrating the brain into a field theretofore the sole province of philosophy - thereby creating a novel nexus of aesthetics and neuroscience.
- As has occurred during the development of other neurosciences, neuroaesthetics is undergoing a discipline-defining maturational process.
- Neuroaesthetics' conceptual development is occurring contemporaneously with accelerating advances in cognitive neuroscience methodology
- Identification of research goals, translational applications, and potential subspecialty training initiatives remain evolving goals.
- Cross-disciplinary initiatives and innovative investigational paradigms mark the excitement of neuroaesthetics' current 'adolescence'.
- Profound translational applications are emerging, including improving identification and measurement of childhood creativity; neuroscientifically-informing art education; enhancing artist health; and developing objectively-definable criteria for art valuation.
- There is consequently escalating need for augmenting the conceptual framework of neuroaesthetics to facilitate continued growth and optimize realization of translational potential.

Developing a knowledge map of neuroaesthetics

- Meta-analytic efforts have been performed regarding neuroaesthetics' current developmental status.
- Select groups have started applying meta-analytic data to develop knowledge maps in order to provide insightful perspective regarding neuroaesthetics' evolving architecture.
- For example, Anglada-Tort and Skov employed metanalytic data derived from an ambitiously comprehensive survey of neuroaesthetics-related publications across a wide range of disciplines to generate a knowledge map of neuroaesthetics. (Tort & Skov, 2019)
- Skov and Nadal (2020) referenced this map in developing their argument that, counter to the increasingly multidisciplinary trend of neuroaesthetics' development heretofore, research on the aesthetic experience (i.e., empiric aesthetics) and research on the aesthetic object represent such divergent enterprises that their merger within current neuroaesthetics mutually inhibit each subfield's development, and consequently should be disentangled.
- Skov and Nadal (2020) in particular argue that neuroaesthetics should divest itself of art valuation, with the latter spun-off from neuroaesthetics into its own field, more appropriately conceptually housed within neuro-economics.
- Such a fundamental re-configuration, while perhaps ultimately strategic, might be premature at this still-early phase during neuroaesthetics' development.
- Since a foundation of that development has been multi-disciplinary confluence yielding compellingly synergistic missions, it would seem prudent at this still-early developmental phase to proceed cautiously regarding any fracturing of the multi-disciplinary "fuel" which has heretofore powered neuroaesthetics' growth.

OBJECTIVE

- To inform the wisdom of either progressive multidisciplinary merger or selective divestiture of component fields currently comprising neuroaesthetics, we query how using knowledge maps to reveal the current status of neuroaesthetics would differ using general versus specific subfield meta-analytic probes.
- For more subfield-specific analysis, we limit current metanalysis of neuroaesthetics within medicine, hypothesizing that such data will yield a distinct knowledge map marked by greater weighting of health-related translational applications.
- For purpose of this study, we focus solely on visual art.

References

1. Anglada-Tort, M., & Skov, M. (2019, November 28). What counts as aesthetics in psychology and other disciplines? A bibliometric analysis of the scientific literature from 1970 to 2018. PsyArXiv. doi:10.31234/osf.io/7xhdg
2. Skov, Martin, and Marcos Nadal. "A Farewell to Art: Aesthetics as a Topic in Psychology and Neuroscience" *SAGE Journals*, journals.sagepub.com/doi/10.1177/1745691619897963.

METHODS

- Neuroaesthetics knowledge maps were generated using *Open Knowledge Maps* (2020) <https://openknowledgemaps.org/>
- Parameters:
 - "neuroaesthetics"
 - any date
 - Pubmed (Life sciences)

RESULTS

- 104 citations initially identified.
- Restriction to visual modality-only yielded subset of 68 publications.
- Current literature ranged across theoretical and empiric studies.

Knowledge Maps of Neuroaesthetics

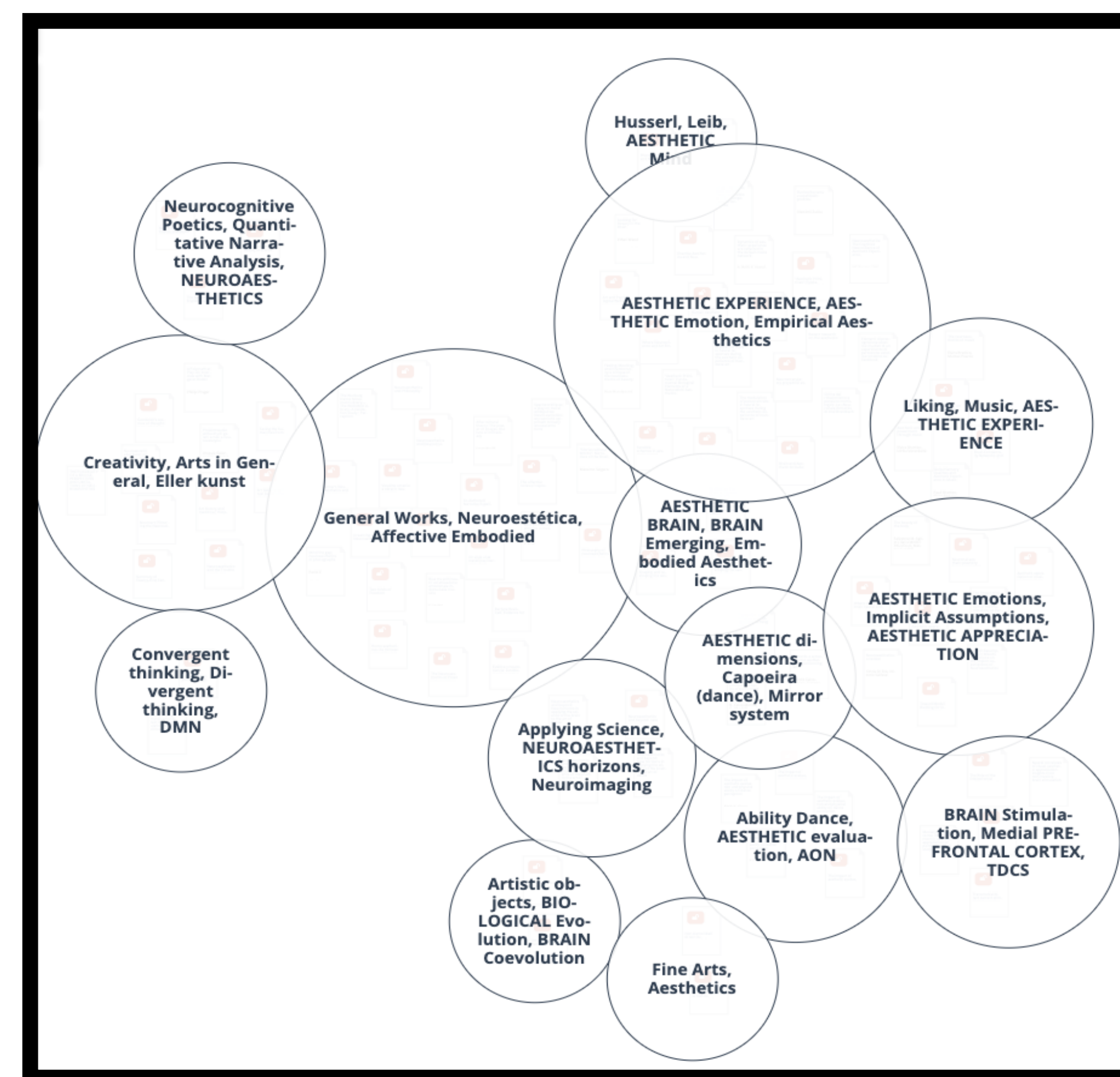


Figure 1: Concept map using <https://openknowledgemaps.org/> with keyword "Neuroaesthetics", any date, and using Base resources (all disciplines) Open Knowledge Maps (2020). Overview of research on neuroaesthetics. Retrieved from <https://openknowledgemaps.org/map/7fac33b74aba849dd9e40e92a9b850fd/> [03 Mar 2020]

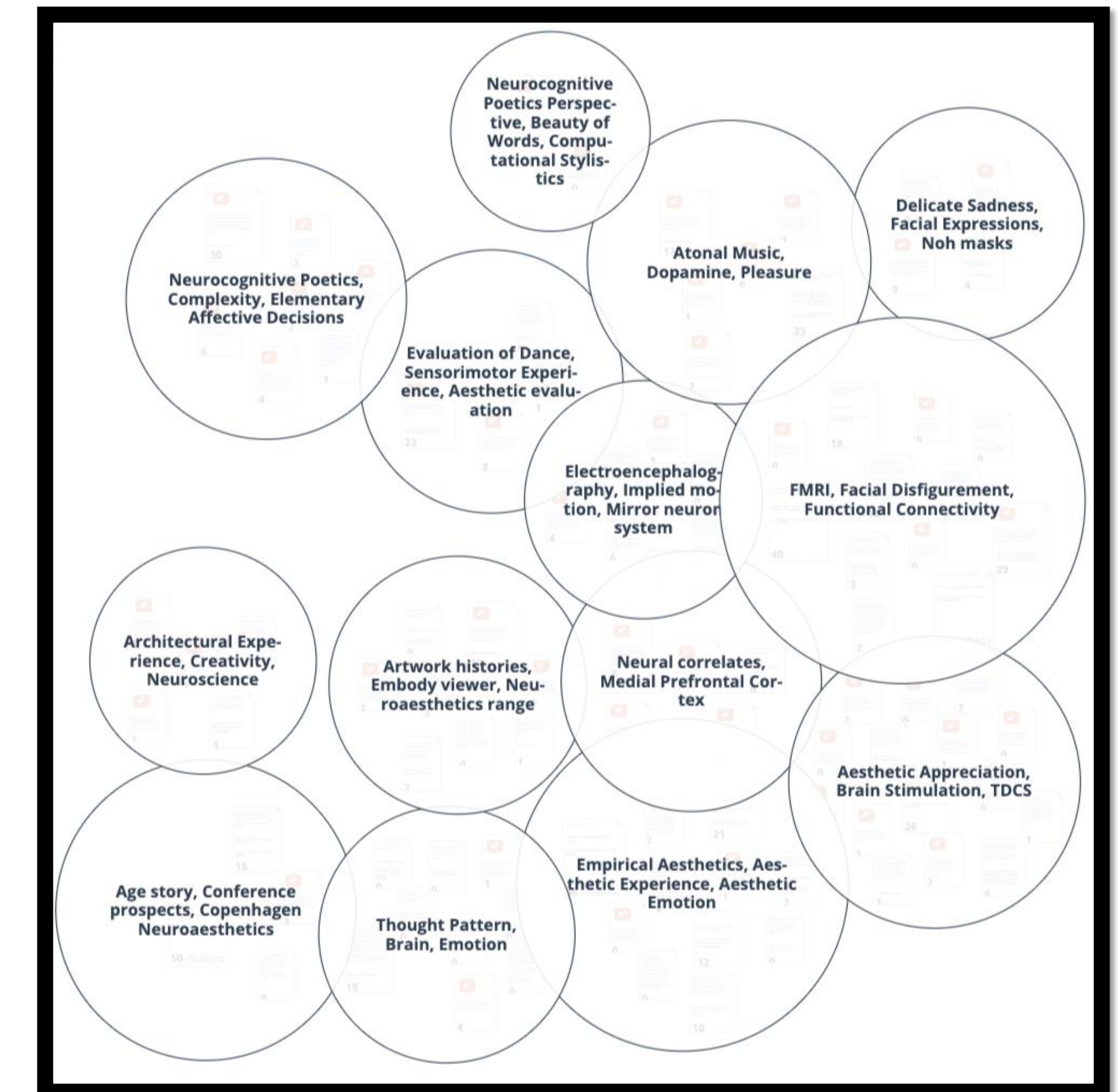


Figure 2: Concept map using <https://openknowledgemaps.org/> with keyword "Neuroaesthetics", any date, and using Pubmed (Life sciences) Open Knowledge Maps (2020). Overview of research on neuroaesthetics. Retrieved from <https://openknowledgemaps.org/map/4ff5e56aac47372845bad14add14c467/> [03 Mar 2020].

CONCLUSION

In contrast to a conceptual framework derived from a knowledge map generated from a wide survey, a model for neuroaesthetics based within a medical model demonstrates greater weighting of translational applications toward health of both the agent of the aesthetic work product and that of the individual experiencing that work.

DISCUSSION

- As neuroaesthetics evolves, there is corresponding need to renovate its conceptual framework.
- In contrast to a singular global model, we propose that considering neuroaesthetics from more focused perspectives yields a more dynamic model, potentially more fully capturing neuroaesthetics' theoretical basis; empiric enterprises; bi-directionality of the art-brain interface; and critical translational applications.
- More work is needed to inform construction of the optimal conceptual framework to inform wise "parenting" of neuroaesthetics' current adolescence, and thereby maximally nurture development of the understanding of the genesis, experience, and valuing of aesthetic work product, with consequent benefit to human creative development and health.