



Probing Characteristics of Visuals in Mental Health Outreach

A animation explaining the biogenic etiology of depression

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Abstract

Objectives This study sought to demonstrate key characteristics of successful mental health outreach (MHO) educational programs through an audio-visual tool addressing biogenic etiology of depression.

Methods Candidate characteristics were identified based on review of MHO literature, evaluated through informal feedback sessions and finalized following committee and content expert review. **Conclusion** Key characteristics indicative of successful visuals in MHO included *emphasizing malleability* of biology, *familiar characters*, and *minimizing literacy barriers*. Tools created for MHO should include these key characteristics.

Introduction

Depression is currently one of the most prevalent causes of mortality and morbidity which occurs in all genders, ages, and socioeconomic backgrounds.^{1,2} Additionally, depression is a multifaceted disorder with diverse causes, and consensus about its pathogenic mechanism is limited. The challenge, then, is developing an appropriate tool that can communicate what current biological attributions are known and then prepare them for inclusion in mental health outreach.

Current visual communication research suggest inclusion of animated characters to offer social contact and testimonials³, as well as kinetic typography due to its effect in minimizing literacy barriers and communicating emotion.⁴

Bibliography

1. Jeon, S. W., & Kim, Y. K. (2016). Molecular neurobiology and promising new treatment in depression. *International Journal of Molecular Sciences*, 17(3), 10.3390/ijms17030381. doi:10.3390/ijms17030381 [doi]
2. Keller, M. B., Hirschfeld, R. M., Demyttenaere, K., & Baldwin, D. S. (2002). Optimizing outcomes in depression: Focus on antidepressant compliance. *International Clinical Psychopharmacology*, 17(6), 265-271.
3. Lu, C., Winkelman, M., & Shucheng Wong, S. (2016). Tablet-based education to reduce depression-related stigma. *Health Education Journal*, 75(1), 84-93.
4. Malik, S., Aitken, J., & Waalen, J. K. (2009). Communicating emotion with animated text. *Visual Communication*, 8(4), 469.
5. McDonnell, R., Breidt, M., & Bulthoff, H. (2012). Render me real? investigating the effect of render style on the perception of animated virtual humans. *ACM Transactions on Graphics*, 31(4), Article 91.
6. Zikmund-Fisher, B. J., Witteman, H. O., Dickson, M., Fuhrel-Forbis, A., Kahn, V. C., Exe, N. L., et al. (2014). Blocks, ovals, or people? Icon type affects risk perceptions and recall of pictographs. *Medical Decision Making: An International Journal of the Society for Medical Decision Making*, 34(4), 443-453. doi:10.1177/0272989X13511706 [doi]

Methods

Probing Characteristics Characteristics for consideration were identified based on review of the MHO literature, evaluated through informal feedback sessions with biomedical visualization student classmates and finalized following review with content expert and committee members.

Scripting & Storyboarding The animation was storyboarded on paper to explore ways to incorporate identified characteristics of successful MHO tools into audio-visual media.

Character Creation The character went through several rounds of critique and evolution before falling on the final design. (See **Fig. 1**) Concept was imported from Adobe Illustrator into 3Ds Max as a spline and extruded. Topology was optimized for animation in Pixologic ZBrush and animated in the 3D character animation service, Mixamo (See **Fig 2**). Final animation and post-compositing was completed in Adobe After Effects.

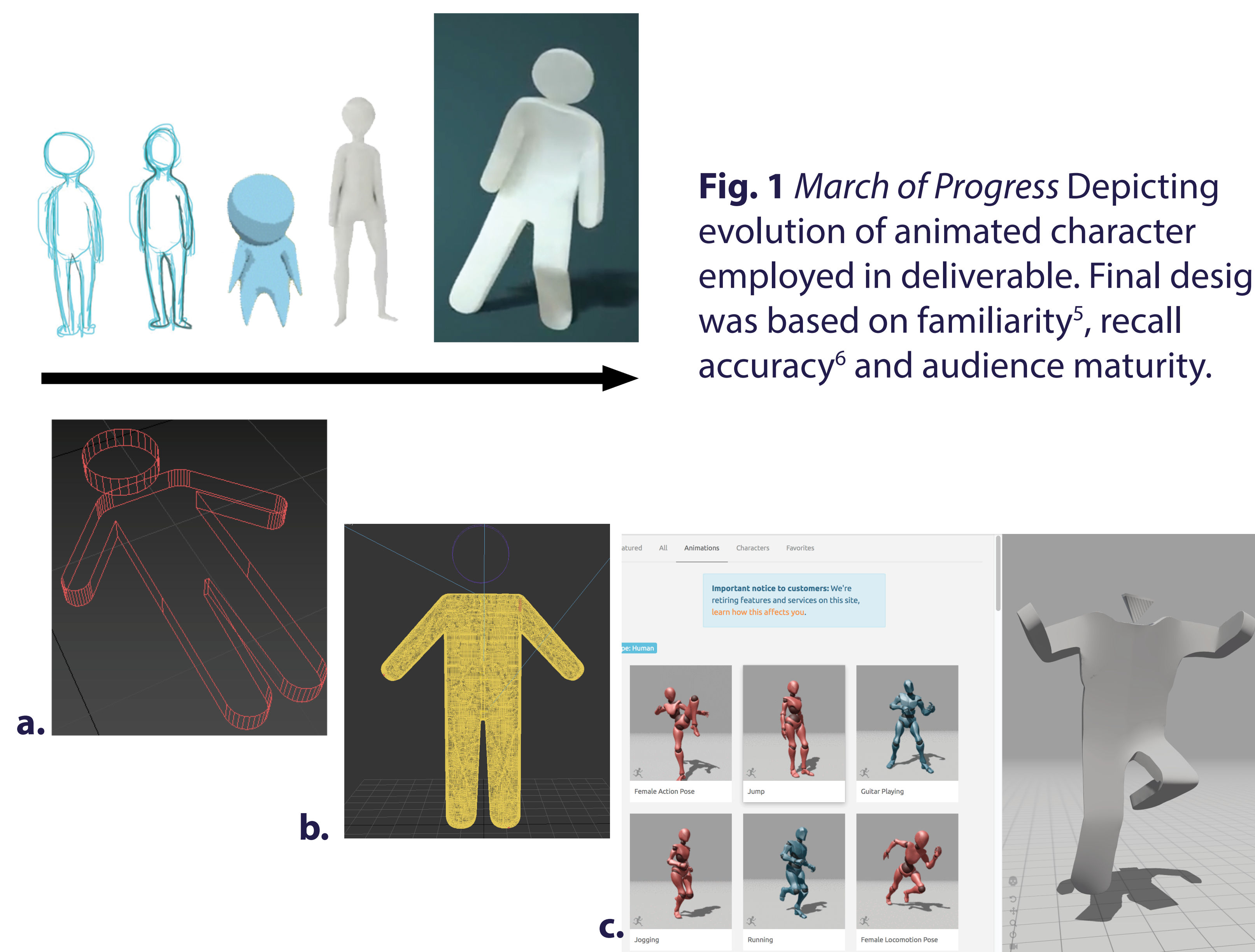


Fig. 1 *March of Progress* Depicting evolution of animated character employed in deliverable. Final design was based on familiarity⁵, recall accuracy⁶ and audience maturity.

Conclusions

This project is an original contribution to a growing body of research that aggregated several key characteristics identified for successful MHO educational tools. By demonstrating these concepts all in one animation, the author has shown that biocommunication has a place in mental health promotion and prevention. Currently this project can be found through the University of Illinois Center of Depression & Resilience website, and can be viewed in full in the AMI2017 salon.

Only three of the key characteristics are listed below:

Characteristics of a Successful MHO Tool

- 1 Stress the fluctuating and malleable nature of biology
- 2 Animated characters can be surrogates for social contact and testimonials
- 3 Kinetic typography can minimize literacy barriers and create a broader range of meaning and emotion

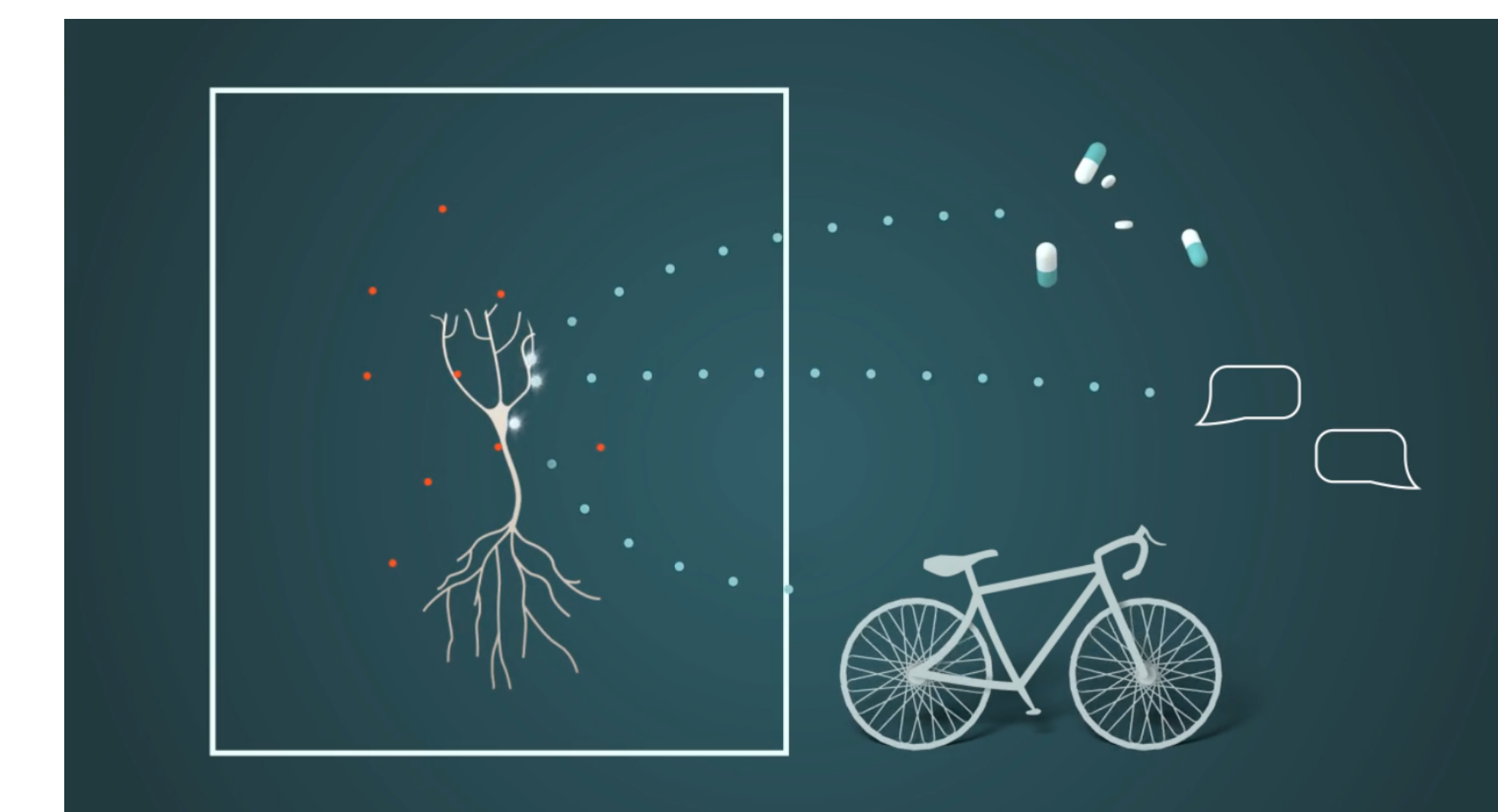


Fig. 3 *Malleability of Depression* Amenable to improvement under various treatments

Acknowledgments

Research Committee

Committee Chair Dr. Evelyn Maizels
Committee Member Leah Lebowicz
Committee Member Donna Hughes

Special Thanks To

University of Illinois Center of Depression & Resilience
Content Expert Dr. Luan Phan
Animation Professor Kevin Brennan
Program Director John Daugherty