# **CSC594 Content Theory of [Emotion] V4**

## **Gianna Rasmussen (GRV)**

## **The Content Theory**

[Autism Skill Tutor](https://docs.google.com/document/d/1Ole2RrNISLHZmBheafPXf2QG-YJWr4QDVLrZv8z3cHI/edit#) - Full content theory.

### **Description of the domain**

Two of the greatest challenges people with high-functioning autism can face are (1) low autistic-confidence and (2) sensory processing/sensory sensitivity problems. (1) and (2) are highly individualized and nuanced problems that very few models of autism treatment acknowledge or handle. This content theory proposes a program that will help high-functioning autistic children develop their socialization skills in a way that adheres to their comfort levels, techniques to help process emotions and over-stimulation, and will give them confidence in their autistic traits.

### **Why we care about this domain**

Methods of treatment for people with high-functioning autism often focus only on improving communication skills and are either inaccessible to the average person or teach how to act as a neurotypical. Sensory sensitivity is something many high-functioning autistics suffer from and often must learn to cope with on their own or after it has already become a problem. This content theory proposes a way to help people with high-functioning autism be able to confidently face the everyday challenges of autism.

### **Defined terms within this content theory**

[Terms](https://docs.google.com/document/d/1UoIXOOAFwVoFh4lXz8CgKEvuIOUp8gIIEYoKtJHoIuc/edit#heading=h.4s802rue4znh)

### **Scope of the domain**

(Taken from [Autism Skill Tutor GRV](https://docs.google.com/document/d/1Ole2RrNISLHZmBheafPXf2QG-YJWr4QDVLrZv8z3cHI/edit#) )

This paper proposes a downloadable computer program and does not consider other forms of implementation. As such, the intended users for the proposed computer program are American children between the ages of 7 and 14, with some consideration for those above the age of 14, that have HFA. Though the techniques to be proposed are applicable to those without autism, this paper will not consider uses outside of application towards treating autism.

## ***Basic research* arguments**

* Many proposed and existing models of autism treatment focus more on teaching people with autism how to appear “normal” rather than skills that would increase personal happiness and confidence.
* Models of treatment that apply Applied Behavioral Analysis (ABA) techniques often teach masking which can be mentally damaging and teach autistic people to mask.
* ABA models implemented in therapy can cause symptoms of PTSD.
* Very few models of autism treatment consider people with high-functioning autism, leaving few viable resources for help in living with autism.

## **Blue-sky annotated notes on how AI technologies might apply to an implementation of your content theory**

[Tech Implementation GRV](https://docs.google.com/document/d/1RVuJIUCjS_fBdJ0jlPTzXZHFqZjfh5Cs65RthS60eJE/edit#)

## **Indexed blue-sky ideas files**

[IDEAS](https://docs.google.com/document/d/1LRpFiw-GfoCd0HewX5X5kZ97a9JtUx_82pnj-tBd1_c/edit)

**All Ideas Documents:** <https://drive.google.com/drive/folders/19_Oy8Y1sPjHKNEnQ7mGtqSTAbFElWCVq?usp=sharing>

## **Best computable emotion and personality papers**

**Two Readings Paper:** [Two Readings](https://docs.google.com/document/d/1FScia7PcVeIbDUncRRSkEfEGcQQI8CnbmXYGc_vl32s/edit)

*Paper 1: Social support agents for older adults: longitudinal affective computing in the home*

Summary: The focus of the paper is on an AI that acts as social support to decrease feelings of and the health risks linked to loneliness, with a primary focus on the effects of such an AI on the elderly. A version of the AI was tested in the “Wizard-of-Oz” study, which was analyzed to understand the potential effectiveness of a fully developed social support agent. The AI in the study was influenced by similar studies that focused on things such as conversational agents for the elderly, artificial companions for the elderly such as robot dogs, and mood managing AI that helps clients manage anger. Previous studies seem to indicate that users tend not to see long-term effects after being taken-off the agents however seem to experience positive effects while using the agents. The results of the study have led to the planning of adding more sensors and emotional comprehension to the AI in order to focus on invoking more positive interactions and feelings from the elders.

Ring, Lazlo, Lin Shi, Kathleen Totzke, and Timothy Bickmore. 2015. "Social support agents for older adults: longitudinal affective computing in the home." *Journal on Multimodal User Interfaces* (Springer) 9: 79–88.

Opinion: The topic of the paper is interesting and the implementation and study of the social support agent seems well executed. I believe this is a worthwhile read for anyone interested in socializing agents or the development of AI that has interactive capabilities. I did find the middle a bit dry and repetitiv, the goal of the study was re-stated in every section and subsection it seemed. One thing I feel is that the study has a very limited and narrow scope due to the small size of the subject pool and the lack of randomness involved. I would love to see the scale of this study expanded so that more types of elderly people are included. It’s a worthwhile read if you have interest in the subject.

Paper 2: Emotion models for textual emotion classification

Summary: The breakdown and current understanding of how software detects and recognizes emotion from text to gather data about websites, products, and other content. The paper presents three kinds of emotional models, going from simple to more complex: categorical, dimensional, and extended. Categorical breaks down human emotions into several core emotions, the number varying depending on the theory. Dimensional suggests that there is a scale in which every word is a certain amount of each emotion, this model is used less than the categorical model and fails to account for context. Extended is a combination of categorical and dimensional and focuses on the emotion of the text group rather than the individual words.

Bruna, Ondřej, Hakob Avetisyan, and Jan Holub. 2016. "Emotion models for textual emotion classification." *Journal of physics: conference series.* 012063.

Opinion: This paper did not give me a great deal of information I have not already learned from this class, however did make me give more thought to the subject of classifying emotions. I did start to think about how odd the inclusion of surprise is in Categorical emotion models, specifically because I consider it to be a combination of usually two core emotions: fear and something else such as joy or anger. I do think this is a good paper to use as an introduction to these concepts.

## **Bibliography**

<https://drive.google.com/file/d/1mjI2J5ye2OMsC1HppE1UqrTF0IE5FC13/view?usp=sharing>

Downloadable: <https://drive.google.com/file/d/168ZCYYY6QwhMuE6VN2ojmsctWDbBVLQT/view?usp=sharing>

## **Suggested readings with annotations**

[Suggested Reading](https://docs.google.com/document/d/1C8lKelsMWd9J4w1Bd1T-LUVfl0hIFEr6KJKpT5jnJeU/edit#)

1. Understanding The Spectrum - A Comic Strip Explanation
2. Understanding the Three Levels of Autism
3. 10 Characteristics of a Person with Asperger’s Syndrome

## **AI code**

[Code Implementation Outline](https://docs.google.com/document/d/13bT4UWD17GZmYIby3V_K8bRAsUV2tbhqheDxI2_9gtw/edit)

Code: <https://drive.google.com/file/d/1Q-BjQP7qDzaI-HKHZ_shbeiSkVRmoG25/view?usp=sharing>

Video of running code: <https://drive.google.com/file/d/1FV4_YUu1T4ue2Ywh2b86orL7fCrULGbk/view?usp=sharing>

## **Planning documents for this project**

[Messy Breakdown](https://docs.google.com/document/d/1Iw5qW8_JP3_VflnFg1h_I02olsJ1yGyaTGBQPmoQjLk/edit#)

[Content Theory A Checkpoint](https://docs.google.com/document/d/1SlxsurfjXaYZzoMOcyhwsnYbs_6jQZ9c84Gq7Ilhsk0/edit?usp=sharing)

[Content Theory B Checkpoint](https://docs.google.com/document/d/1RcnETMBlshg2up9y1lOj4c7xichU8Lls2BzJAFuaScY/edit#)

## **Shared Google (or other) documents**

**Mini Personality Content Theory:** [MB-Mini Theory GRV](https://docs.google.com/document/d/1eubltXelAGPL-2QLY0PPLdrIJCSl_akogrQ3ic31Pcc/edit?usp=sharing)

Summary: How the facets of the Myers-Briggs Personality Types can be utilized in an AI to create the optimal schedule for a college student based on their MBP Type. Tags help the AI identify what classes are best for different personality types. Priority is based on information the user inputs.

Commented On:

Peter Jachim

Genevieve Rahman

Liliana Hotsko

## **Structured Outlines for papers generated by this work (with bibliographies)**

* [Structured Outline.docx](https://docs.google.com/document/d/1hai2R3TcV0fYoWOYjzQ_1H2Qc5m05HZk/edit)
* [Structured Outline Autism Skill Tutor](https://docs.google.com/document/d/1l2_U6OtonlFuIWKVJikcKuLdz8BIcYgFFyc2Zm62eP0/edit#heading=h.t6makqylxmwg)

## **Constructive scholarly critique of other student content theory Google Documents:**

* 2022-06-05 Michelle Camargo-Reyes Content Theory of Cultural Competence in the Decision Making Process
  + [V4 - MichelleCamargo-ReyesRootCT](https://docs.google.com/document/d/1W-ELkPs5H1QnXkHIyGv5KVWoebP23SDH-h3GWnWMgGk/edit#)
  + The document was very clean and easy to navigate. The theory was interesting, but I did have a bit of trouble imagining the execution. I think it needs to be a little tighter still, and more information and in-depth descriptions need to be added.
* 2022-06-05 Genevieve Rahman Content Theory of AI Integration into Human Resources (Personality Evaluation)
  + [GenevieveRahmanRootCT](https://docs.google.com/document/d/1UQcDdLbWjWQiql4o68n_IxgM1sKh_ewwUUD1JzbMv7I/edit#heading=h.ft007tg28u7w)
  + AI Integration in Human Resources (Personality Evaluation) is an interesting topic that proposes a potential solution to tampering down on hiring bias. There are a lot of ways these kinds of programs can go wrong and be more biased than hirers, so to take on this topic one must be ready with a plan to address plans to prevent the AI from developing biases based on training. While the Content Theory brings up a lot of good points and fair arguments for the implementation of such a program, I would have liked to see more acknowledgement of all the ways it could go wrong and how Genevieve plans to combat them.
* 2022-06-05 Peter Jachim MOnSTeR: Content Theory of Misinformation
  + [PeterJachimRootCT](https://docs.google.com/document/d/1k-9WPu-NwZJPbT-jNcyFz7VWdiVy97ps6nB-Zh7U_AA/edit#)
  + Misinformation has become a pretty big deal these last few years, and this content theory addresses how misinformation can be combated using AI. This content theory is well written and explains most everything clearly and in great detail. THe language used is appropriate and it is a pretty decent read. I would have loved to see a bit more in the Future Research section, maybe more in depth planning.