# **CSC594 Content Theory of [Emotion] V3**

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## **The Content Theory**

### **Description of the domain**

Two of the greatest challenges people with (a) high-functioning autism have are (1) social and communication skills and (2) sensory processing/sensory sensitivity problems. (1) and (2) are highly individualized and nuanced problems that take years of trial-and-error and coping strategy creation. This content theory proposes a computer program made up of three sections that will give people with (a) skills and techniques that can be used in day-to-day life to make living with autism easier. Section one will focus on social development, two on coping strategy development, and three will be a resource that uses personalized data to find the best possible alternatives to foods and everyday items for users.

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

Methods of treatment for people with high-functioning autism often focus only on improving (a) 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**

* Autism Spectrum Disorder (ASD)
* Functioning Autism
* Non-Functioning Autism
* Asperger’s Syndrome
* Pervasive Developmental Disorder - Not Otherwise Specified (PDD-NOS)
* Treatment
* Sensory Sensitivity
* Masking
* Neurotypical
* Neurodivergant

### **Categories in the domain**

* Social Development
* Coping Strategy Development
* Alternatives Finder

### **Scope of the domain**

This content theory is only considering treatment for those with High-Functioning Autism which is to be implemented as a downloadable program.

### **Other working documents**

[There may be many other documents, including code examples, that go into the definition of your content theory.]

## ***Basic research* arguments**

[Why this is a valid area of study to explore, sometimes without prior goals]

## **Blue-sky applications**

1. Household
2. Schools

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

[How might existing AI technologies be best used to implement your content theory, assuming extensive programming resources?]

Give us a link to the **Google Doc containing your notes** on how other AI technologies might apply to work in your own domain area. This discussion should contain 1,000 words to 10,000 words or more.

## **Master Links**

[Master Links](https://docs.google.com/document/d/1La33Ji3ysN_18hpnaTNYOwGpBE6FR3PB-dHfQhhATyY/edit?usp=sharing)

## **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**

Link to your Word-compatible XML-formatted Bibliography file

## **Implementation Notes**

* [Implementation Plan Notes](https://docs.google.com/document/d/13bT4UWD17GZmYIby3V_K8bRAsUV2tbhqheDxI2_9gtw/edit?usp=sharing)

## **Socket connection to your running AI server**

## **Suggested readings with annotations**

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

## **Video of your running AI code**

[Required on forums as well at the end of class]

## **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)

## **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)

## ***Commented* AI Utility code snippets designed for this content theory**

* URL + description
* URL + description
* URL + description

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

* 2019-03-02 Name URL + description
* 2019-03-07 Name URL + description
* 2019-03-09 Name URL + description