Scoring Graduate-School Admissions Essays Using the Model of Hierarchical Complexity

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Background - 1

- The Model of Hierarchical Complexity has been used extensively to study
  - How reasoning differs in people of different ages and different educational backgrounds
- Recent studies by Commons and colleagues have created tasks made up of:
  - Problems or vignettes
  - With 5 to 6 subtasks
    - From preoperational, primary or concrete to metasystematic order
- This has been a powerful way to find confirmatory evidence for the Orders of Hierarchical Complexity

Background - 2

- We often need information about the existing behavior of workers or students
- In such cases, the Model can be used to score a variety of kinds of behaviors
- Here we will be coding graduate students' narrative statements
  - These statements are written as part of a student's application for Graduate School
- What stages are typical of such students?
- Can student performance in the program be predicted by stage-related characteristics seen in their writing?

What We Know

- Crone-Todd & Gonsalves (2010) found that undergraduate Honors students in psychology wrote at a formal stage
  - Non-honors students' writing included more abstract statements
- Miller (2007) presented pilot data on the Graduate School admissions essays written by prospective counseling students
  - Each essay showed a range of stages
  - There were differences across students

Method

- Participants
  - This paper presents data from 14 students
  - All student files were numbered, from 1 to 200
  - A random sample of 100 files was selected
  - These students applied to and were admitted to a Master's Program in Counseling in New England

Narrative Statement Questions

- Statement of purpose (500- to 1,000-words, double-spaced):
  - *What factors in your personal and professional history have influenced you in the past and now lead you to seek admission to this program at Salem State?*
  - *What are your long-term professional goals, and how will this program help you meet them?*
  - *Is there any other information that you think would help the admissions committee to evaluate your application?*

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Results

- Essay length in number of sentences
  - $M = 29.21$ ($SD = 9.72$)
  - Median = 27.5 sentences (Range from 18 to 59)
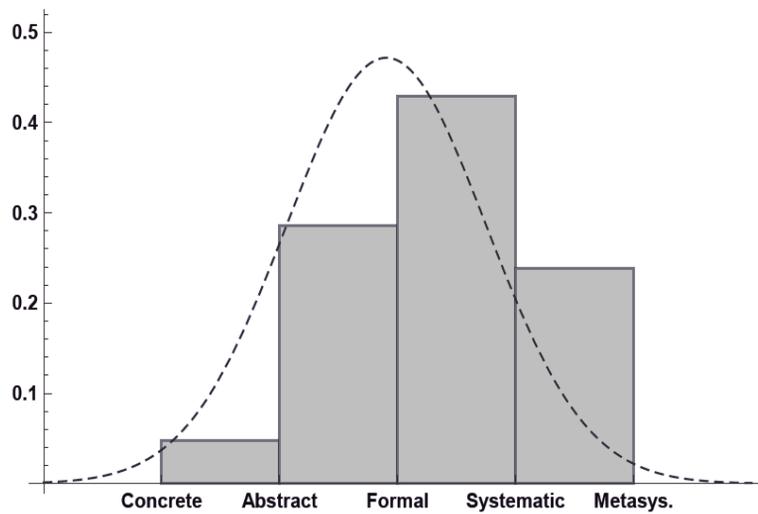- Length was non-significantly negatively correlated with mean stage (-.388)

Descriptive Statistics

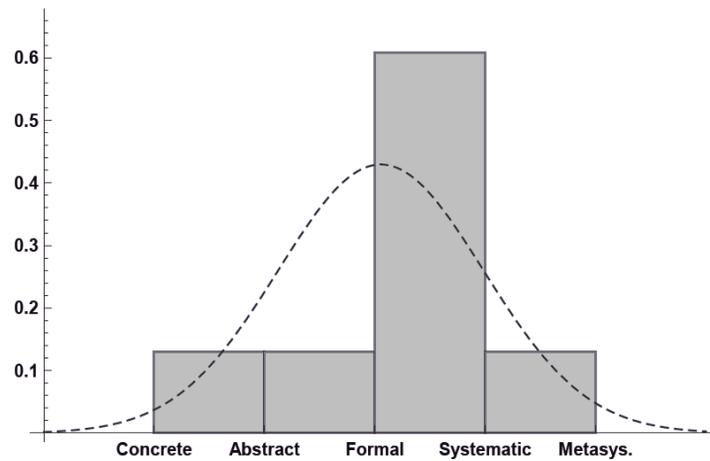| Mean Stage Range	9.76 (.27) (9.17 – 10.08)
Median Stage Range	10 (9 - 10.25)
Minimum Stage Range	8 (8 - 9)
Maximum Stage Median Range	12 11 (10.5 – 12)

Distribution: Median Stage
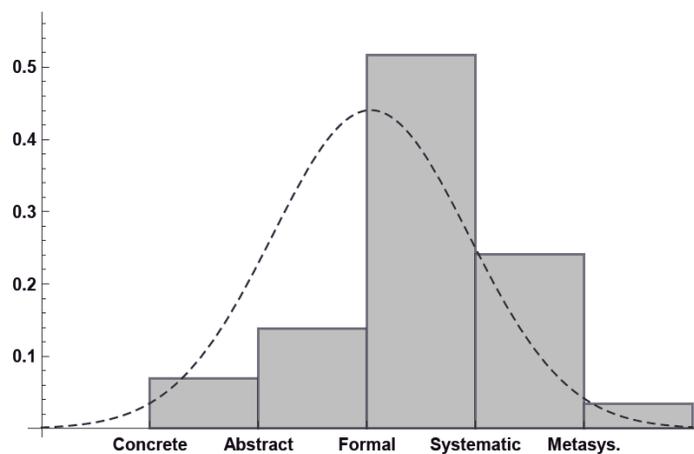
Median Stage
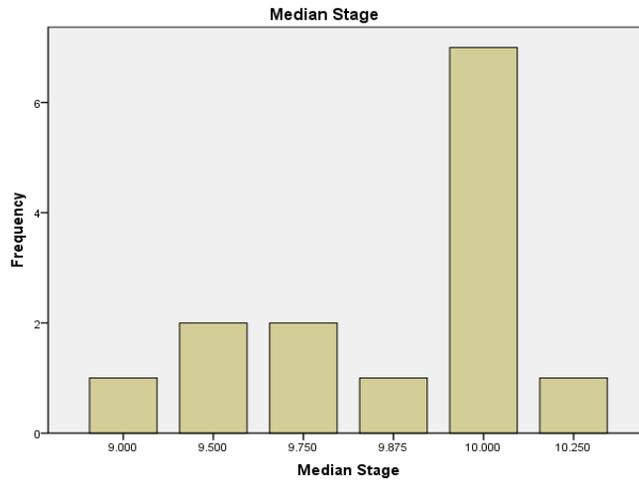
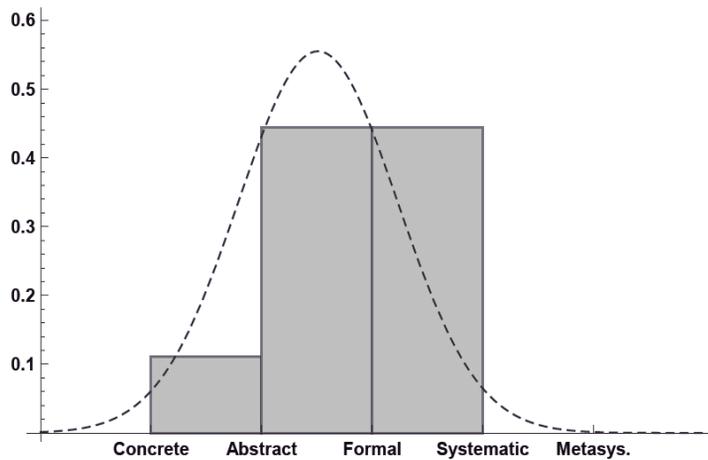# Individual Patterns: Participant 4

Individual Patterns: Participant 94
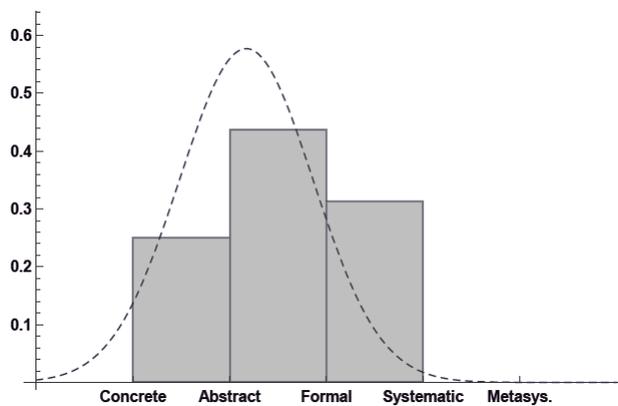## [one of the highest]

Individual Patterns: Participant 122
[One of the highest]

Individual Patterns: Participant 171
[one of the lowest]

Individual Patterns: Participant 999
[one of the lowest]

Concrete stage

- But at that time, my grandfather, who I had lived with for years, was diagnosed with cancer. [Participant 170]
  - Tells a story with concrete facts

- When I came to this country ten years ago, I could not speak or understand English. [Participant 77]
  - Tells a story with concrete facts

Abstract Stage

- This is a difficult transition to make, from high school to college [Participant 4]
  - The difficulty of the transition names a variable called degree of difficulty
- I embrace [the road ahead] with vigor and am ready for a challenge [Participant 152]
  - With vigor refers to a variable that might range from just meeting the challenge or doing so vigorously

Formal stage

- In these positions, I received some personal satisfaction knowing that I was helping put quality textbooks into the hands of students [Participant 49]
  - If I help put quality textbooks in the hand of students then I received some personal satisfaction. Relating two abstract stage variables
- I became adept at avoiding situations that would cause me anxiety and as a result I did well throughout college, particularly in psychology classes [Participant 170]
  - If a situation caused me anxiety then I avoided it. Relating two abstract stage variables

Systematic Stage - 1

- Yet, while the faces are different, their stories have a common theme:
  - past trauma, neglect and/or abuse, loss, diagnosed mental disorders
  - all of which lead up to them using the substance(s) to "self-medicate", to stop or numb the feelings, or just fill the void that has been left inside of them [Participant 173]
  - Past trauma, neglect and/or abuse, loss, diagnosed mental disorders are multiple causes of them using the substance(s) to "self-medicate", and/or to "fill the void" that has been left inside (two outcomes)

Systematic Stage - 2

- This is a difficult transition to make from high school to college and I got to see the rewards of being there for those individuals who were struggling with this and aiding them in brainstorming solutions to fix the difficulties they were facing [Participant 4]
    - Formal relationship 1 - > [This participant has current experience working with in an adolescent treatment facility] and as a result "gets to see the rewards of being there"
    - Formal relationship 2 - > they can aid them in brainstorming solutions for difficulties they are facing
    - This is a system of both getting rewards for being there and working AND aiding the adolescents who are there

"Telegraphic" Metasystematic

- These experiences have allowed me to witness the family dynamics in two entirely different cultures that I can share through discussions with fellow classmates and faculty
    - This student grew up in Lithuania, during the time that it was still part of the USSR. She discusses both earlier in this paragraph, and earlier in the essay, the topic of "family dynamics" in this context
    - Then, she mentions that having lived with and worked for two American families, she later on experienced "family dynamics" within families in this different culture
    - Earlier she describes "family dynamics" as a system containing multiple inputs and multiple outputs
    - Given the groundwork that was set up earlier in this essay we coded this as metasystematic
    - Note that the two systems are not really intercoordinated; so it is more properly coded as systematic, in the transition step of "smash" on the way to metasystematic