APPENDIX D

THE SCALE USED TO DEVELOP THE QUANTITATIVE DATA

Translating the interviews into quantitative data was a necessary process in providing useful methods of comparison across different groups (i.e. gender, different lifecycle stages and adaptive/routine/transitioning scientists). However, developing a reliable process for doing this presented difficulties. Within their interview, participants regularly contradicted themselves or expressed a point of view that modified their answer to a direct question. For example, several participants argued in a response to a direct question that scientific writing was never and should not be persuasive, but then at other points in the interview made observations which suggested that their perspective was more nuanced than this. Working with only anonymized responses to direct questions lifted from context (the best way to maximize objectivity in the assessment) would therefore have produced extremely inaccurate results in many cases.

For this reason, the variables identified in the model were converted to quantitative data based on the entire interview, from answers to direct questions (e.g. is scientific writing persuasive?), indirect questions (e.g. can you show me what you mean by 'story'?), and the interview as a whole (for example, if a participant said that scientific writing was never persuasive but later in the interview while discussing something else demonstrated evidence of seeing scientific writing as persuasive, this was used to modify the original rating). The analysis was conducted twice, four weeks apart, with the names of the participants removed, and where discrepancies were apparent between the two sets of analysis, the transcript was assessed again. While this approach sacrificed the element of anonymity in a small number of the interviews (a few interviews were so distinctive and memorable that they were easily identifiable), this was considered the most reliable approach.

Each variable was allocated a mark out of 10, using the scales provided below.

QUADRANT 1: EARLY EXPERIENCES

Childhood Attitudes

1. Strongly Negative				5. Neutral				10. Strongly Positive	

Childhood Experiences

1. Strongly Negative				5. Neutral				10. Strongly Positive	

QUADRANT 2: LEARNING TO WRITE SCIENCE

Help from Advisor

1. None				5. Some Useful Support				10. Sustained and Extensive	

Help from Community (e.g. lab partners, friends, family)

1. None				5. Some Useful Support				10. Sustained and Extensive	

Help for Rhetorical Reading

1. None				5. Some Useful Support				10. Sustained and Extensive	

Ongoing Support Post-Ph.D.

1. None				5. Some Useful Support				10. Sustained and Extensive	

QUADRANT 3: ATTITUDES

Enjoyment

1. None				5. Neutral				10. Extreme	

Motivation

1. None				5. Neutral				10. Extreme	

Resilience

1. None				5. Neutral				10. Extreme	

Strength of Self-efficacy/Purpose

1. None				5. Neutral				10. Extreme	

QUADRANT 4: BELIEFS

Function of Writing

1. Unnecessary				5. Sometimes Discovery, Sometimes Reporting				10. Is Always about Discovery and Reporting	

Importance of Audience

1. None				5. Neutral				10. Extremely	

Importance of persuasion

1. None				5. Neutral				10. Extremely	

Beliefs about Identity/Role as a Scientist

1.Role is to move science forward	Role is about disciplinary contribution and change	Role is about disciplinary leadership	Role is about disciplinary leadership/ cross-disciplinary connection	Role is about disciplinary leadership/ reaching out to a broader audience	Role is about disciplinary leadership and/ public leadership	10.Role is to change society