

Author's election of Open Access Publishing PLUS as the Type of Publishing confirms Author's choice to have ProQuest/UMI publish the Work according to the Open Access Publishing PLUS option described here.

Open Access Publishing PLUS. In addition to the rights granted under Section I of this UMI® Publishing Agreement, ProQuest/UMI may reproduce, distribute, display and transmit the Work in electronic format in the ProQuest Dissertations & Theses database, where it may be made available for free download. A subset of the ProQuest Dissertations & Theses database, currently known as PQDT Open, may be accessed by the academic community as well as through major search engines and open access harvesters. ProQuest/UMI may also provide an electronic copy of the Work to Author's degree-

granting institution where it may also be posted for free open access. Learn more: <http://www.proquest.com/en-US/products/dissertations/epoa.shtml>

Copy Sales. ProQuest/UMI and its agents and distributors may offer copies of the Work for sale in tangible media, including but not limited to microform, print and CD-ROM, as well as in electronic format either individually or as part of its electronic database and reference products and services. No royalties shall be due to Author.

Publishing Fees. Author's payment of the additional Open Access Publishing PLUS fee is a one-time, up-front fee in addition to the UMI® dissertation or thesis publishing fee. Author's institution may assess additional fees to be collected along with the Open Access and publishing fee.

Section III. Publishing Options & Signature

Select the publishing options below that best fit your interests and scholarly publishing obligations.

Traditional Publishing

- I want to make my work widely available and I want to be eligible to receive royalties on the sale of my work.
- I understand that I must maintain a current mailing address with ProQuest/UMI in order to be eligible to receive royalties.
 - I understand that the ProQuest/UMI fee for Traditional Publishing is \$25 for Master's thesis and \$25 for Doctoral dissertations.
 - I understand that my graduate institution may pay all or a portion of the total fee as well as may require additional fees in association with my submission to ProQuest/UMI.

Open Access Publishing PLUS

- I want the broadest possible dissemination of my work, and I want to provide free global access to the electronic copy of my work via the internet.
- I understand that I will not be eligible to receive royalties.
 - I understand that the ProQuest/UMI fee for Open Access Publishing PLUS of Master's thesis is \$120 and for Dissertations is \$120, and that my graduate institution may pay all or a portion of the total fee as well as may require additional fees in association with my submission to ProQuest/UMI.

SELECT PUBLISHING OPTIONS

I want my work to be available as soon as it is published

- Yes
- No – I would like access to the full text of my work to be delayed for the following period of time:
- 6 month embargo
 - 1 year embargo
 - 2 year embargo

Note: Most institutions have delayed release (embargo) policies, please consult with your Graduate School/Program, if you need to delay the release of your work. Access to the full-text of your work will be delayed for the time period specified above, beginning from the date that we receive your manuscript at ProQuest/UMI. During this time, only your citation and abstract will appear in the ProQuest Dissertations & Theses Database (PQDT).

I want major search engines (e.g. Google, etc...) to discover my work. Learn more: <http://www.proquest.com/en-US/products/dissertations/google.shtml>

- Yes
- No

I want my graduate work to be sold by third party retailers in addition to ProQuest/UMI. (Note: If Traditional Publishing is chosen above, all sales are eligible to accrue royalties.)

- Yes
- No

Acknowledgment: I have read, understand and agree to this UMI® Publishing Agreement, including all rights and restrictions included within the publishing option chosen by me as indicated above

REQUIRED Author's signature Laura Mills-Smith Date 5/9/16
(Print Name) Laura Mills-Smith
Institution conferring degree Virginia Tech

Dissertation/Master's Thesis Submission Form

Please print clearly in block letters

Please check type of manuscript

M (Master's Thesis)

D (Dissertation)

Personal Information

Last Name Mills-Smith

Middle Name or Initial A

First Name Laura

Country (ies) of Citizenship USA

Degree & Dissertation Information

Title of Dissertation/ Thesis The Role of Contingency and Ostensive Cues on Infants' Cognitively Demanding Word-Object Learning

Institution conferring degree Virginia Tech

Degree awarded (abbreviate; e.g., Ph.D.) Ph.D.

College, School, or Division College of Science

Year degree awarded 2016

Department or Program Psychology

Year manuscript completed 2016

Advisor/Committee Chair Robin Panneton

Committee Member Anthony Cate

Committee Member Craig Ramey

Committee Member Susan White

Language of manuscript English

Primary Subject Category: Enter the 4-digit code and category name from Guide 2 that most closely describes the disciplinary area of your research. Code 0620 Category Developmental Psychology

You may suggest two additional subject categories that may aid in the discovery of your work in our digital database.

Code _____ Category _____ Code _____ Category _____

Provide up to 6 keywords or short phrases for citation indices, library cataloging, and database searching.

referential learning infancy eye-tracking
ostensive cues

Current Contact Information

Current Email Address LAURAMILLS11@GMAIL.COM

Street Address (line 1) 500 Houndschase Ln Apt E

Street Address (line 2) _____

City Blacksburg State/Province VA Daytime Phone 724 549 8539

Country USA Postal Code 24060 Evening Phone _____

Permanent Contact Information

Permanent Email Address same as above

Street Address (line 1) same as above

Street Address (line 2) _____

City _____ State/Province _____ Future Phone _____

Country _____ Postal/ZIP code _____ Alternate Future Phone _____

THIS PAGE MUST ACCOMPANY YOUR MANUSCRIPT AND THE REST OF YOUR SUBMISSION MATERIALS
Attach additional, separate copies of your Title Page and Abstract to this form

The Role of Contingency and Ostensive Cues on Infants' Cognitively Demanding Word-Object Learning

Laura Mills-Smith

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Psychology

Committee Members:

Robin K. Panneton, Ph.D., Committee Chair
Anthony D. Cate, Ph.D., Committee Member
Craig T. Ramey, Ph.D., Committee Member
Susan W. White, Ph.D., Committee Member

April 27, 2016

Blacksburg, VA

Keywords: referential learning, infancy, eye-tracking, ostensive cues

The Role of Contingency and Ostensive Cues on Infants' Cognitively Demanding Word-Object Learning

Laura Mills-Smith

ABSTRACT

Older infants are good referential learners. That is, at around 14-months of age, they begin to learn the verbal labels of objects and events around them. However, referential learning can be made more challenging by increasing the lexical similarity between labels. The primary goal of this study was to examine whether an adult speaker's ostensive cues and eye gaze-object contingency could augment referential learning in 14-month-old infants under difficult conditions (i.e., minimal pair labels). In Experiment 1, infants were familiarized and tested on two word-object associations with minimal pairs (e.g., "bin" and "din"), presented on an eye-tracker. Importantly, each session began when infants made eye contact with a female speaker on the screen, and she continually looked at and verbally referenced each object in an infant-directed style. On test trials when the familiar object+label was switched, infants significantly increased their visual scanning of the speaker's mouth compared to control trials. In Experiment 2, the same procedure was followed with a new group of 14-month-olds, except that the speaker now looked in the opposite direction from the objects on the screen, but continued to label them with minimal pairs in an infant-directed style. In contrast to the results of Experiment 1, infants in this latter experiment did not differentially attend to any area of her face during the switch trials. This pattern of results shows that the ostensive nature of a social partner augments infants' referential learning under cognitive challenge, but it is the contingent nature of the speaker's regard to what is being labeled that is a necessary factor in promoting learning.