

# Do We Know What We Know? Expectation-of-Knowing and TOT Experiences

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## ABSTRACT

Schwartz (1999) suggested that TOTs can result from indirect, inferential processes in addition to direct access processes. Thus, TOTs may be created by what people think they should know. The existence of Illusory TOTs (i-TOTs), subjects reporting a TOT in response to questions that have no correct answer, supports the effects of inferential processes. The current study explores the effects of manipulating expectations of knowing on TOTs, both confirmed (c-TOTs) and unconfirmed (u-TOTs), and i-TOTs. A total of 99 students (63% women; 37% men) completed a 99-item general information test containing both answerable (79) and unanswerable (20) TOT-eliciting questions. Participants were randomly assigned to one of three expectation conditions: high, low, and control. Contrary to predictions, we did not find more c-TOTs or a higher ratio of u-TOTs to c-TOTs in the high expectation condition. However, as predicted, the high expectation condition produced a significantly higher ratio of i-TOTs to c-TOTs. These data are consistent with inferential explanations of i-TOTs and some u-tot, but tend to support direct access explanations for standard TOTs.

## What are TOTs & i-TOTs

The feeling of knowing a word, but being unable to say it is referred to as the tip-of-the tongue experience (TOT). Illusory TOTs (i-TOTs) are said to occur when a person reports a TOT for a word that is unavailable, forgotten, or never actually known (Schwartz, 1998).

## Direct-Access & Inferential Models

The direct-access models assume that a TOT is related to inadequate physiological activation of an unrecalled target word (James and Burke, 2000). Schwartz suggests that TOTs may also result from inferential processes. Participants may base conclusions about their likelihood of knowing a word on background information in the stimulus rather than partially accessed target information (Schwartz, 1998; 2000). I-TOTs support the inferential view, since they occur when a TOT is present but there is no target. The current study explores Schwartz's (1998) inferential model by manipulating participants' expectations of what they believe they should know about targets in an attempting to increase participants' utilization of inferential processes and observe the affect on confirmed, unconfirmed, and illusory TOTs

## Hypotheses: The high expectation condition will illicit:

1. More c-TOTs than low expectation or control
2. A larger ratio of u-TOTs to c-TOTs than low expectation or control
3. A larger ratio of i-TOTs to c-TOTs in low expectation or control

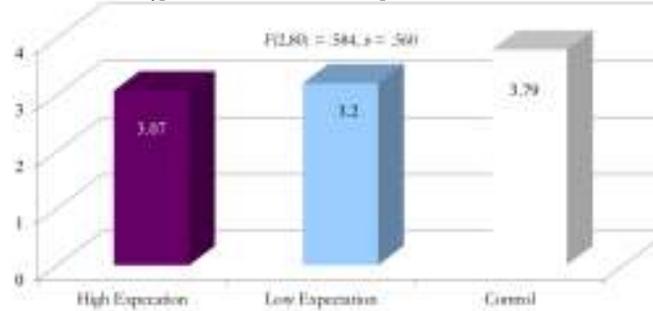
## Materials & Procedure

Ninety-nine information questions, including 79 answerable and 20 unanswerable questions (Schwartz, 1998) comprised our measure. Participants were randomly assigned to one of three conditions: high expectation, low expectation, and a no expectation control. Expectation was manipulated by varying a target sentence the end of the instructions: other students answered XX% of the students answered the majority of the questions correctly." For the high expectation condition, subjects were told that 75% of the pilot study had answered the questions correctly, for the low expectation condition participants were told that 25% had answered the questions correctly. In the control condition this sentence was excluded.

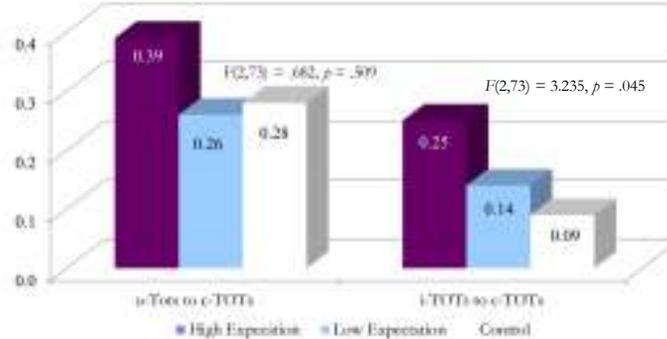
## Answer These Questions, If You Can:

- What is the name of the planet Mercury's moon?
- What is the Capital of Finland?
- What is the only cat to have blue eyes?
- What is the name of the only kind of living reptile that flies?

Hypothesis 1: The Effect of Expectations on c-TOTs



Hypothesis 2 & 3: Effect of Expectations on u-TOT & i-TOT Ratios



## Results & Discussion

Our findings provide partial support for Schwartz' (2011) inferential model, since it demonstrates that i-TOTs are sensitive to the participant's expectations of knowing, presumably in turn influencing the inferences they draw. However, our data do not support the theory that inferences explain a significant fraction of non-illusory TOTs. Contrary to our first hypothesis, the high expectation condition did not elicit more c-TOTs than the other conditions. Contrary to hypothesis 2, the high expectation condition did not elicit a larger ratio of u-TOTs to c-TOTs. In support of hypothesis 3, high expectations did elicit a larger ratio of i-TOTs to c-TOTs.

We were surprised to find that both high and low expectation manipulations increased the production of i-TOTs relative to c-TOTs. We suspect this is because we did not clearly communicate to participants in the low condition that the 25% of the college students reported to have answered the questions correctly constituted a low proportion. Instead, our manipulation seems to have compared a no-expectation control with two high expectation conditions. Future research should focus on this issue for further clarification.

The current study also found an unexpected gender difference in the production of TOTs. Gender significantly affected both the total number of TOTs elicited, and the number of c-TOTs elicited. Overall, women reported more TOTs (11%, *SD* 8%) than men (7%, *SD* = 7%);  $t(89) = 2.25, p = .027$ . Further, women reported more u-TOTs (8%, *SD* = 6%) than men (5%, *SD* = 5%);  $t(89) = 2.58, p = .03$ . Most past research has not dealt with gender based TOT differences, and no research to date replicated the result that women produce more TOTs of any kind than men. One interesting possibility is that women were not confident enough to simply report that they did not know the answer to the general information questions and so were more likely to report a TOT instead of a "don't know."