

## FEAR APPEALS AND INFORMATION SECURITY BEHAVIORS: AN EMPIRICAL STUDY

By: **Allen C. Johnston**  
 Department of Management, Information Systems,  
 and Quantitative Methods  
 School of Business  
 University of Alabama at Birmingham  
 1530 Third Avenue South  
 Birmingham, AL 35294-4460  
 U.S.A.  
 ajohnston@uab.edu

**Merrill Warkentin**  
 Department of Management and Information  
 Systems  
 College of Business  
 Mississippi State University  
 P.O. Box 9581  
 Mississippi State, MS 39762-9581  
 U.S.A.  
 mwarkentin@acm.org

### Appendix A

#### Instrument (with Notes Added Regarding Formative Versus Reflective Scales)

##### Section 1: General Purpose

Think about your usage and maintenance responsibilities for a specific computer system. Please select a single score from 1 to 5 where 1 means you **Strongly Disagree** with the statement and 5 means you **Strongly Agree** with the statement.

	Strongly Disagree (1)		Neutral (3)		Strongly Agree (5)
1. I maintain important data on a specific computer.	[ ]	[ ]	[ ]	[ ]	[ ]
2. I am responsible for the detection, prevention, and/or removal of spyware from that computer.	[ ]	[ ]	[ ]	[ ]	[ ]
3. I am concerned for the security of the data on that computer.	[ ]	[ ]	[ ]	[ ]	[ ]

## Section 2: Spyware Threat Concerns

The following statements concern spyware and spyware protection. Anti-spyware use refers to installing, running, updating, and/or configuring the software. Please select a single score from 1 to 5 where 1 means you **Strongly Disagree** with the statement and 5 means you **Strongly Agree** with the statement.

	Strongly Disagree (1)		Neutral (3)		Strongly Agree (5)
<b>Threat Severity (reflective)</b>					
1. If my computer were infected by spyware, it would be severe (TSEV1).	[ ]	[ ]	[ ]	[ ]	[ ]
2. If my computer were infected by spyware, it would be serious (TSEV2).	[ ]	[ ]	[ ]	[ ]	[ ]
3. If my computer were infected by spyware, it would be significant (TSEV3).	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Threat Susceptibility (reflective)</b>					
4. My computer is at risk for becoming infected with spyware (TSUS1).	[ ]	[ ]	[ ]	[ ]	[ ]
5. It is likely that my computer will become infected with spyware (TSUS2).	[ ]	[ ]	[ ]	[ ]	[ ]
6. It is possible that my computer will become infected with spyware (TSUS3).	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Self-Efficacy (reflective)</b>					
7. Anti-spyware software is easy to use (SEFF1).	[ ]	[ ]	[ ]	[ ]	[ ]
8. Anti-spyware software is convenient to use (SEFF2).	[ ]	[ ]	[ ]	[ ]	[ ]
9. I am able to use anti-spyware software without much effort (SEFF3).	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Response Efficacy (reflective)</b>					
10. Anti-spyware software works for protection (RESP1).	[ ]	[ ]	[ ]	[ ]	[ ]
11. Anti-spyware software is effective for protection (RESP2).	[ ]	[ ]	[ ]	[ ]	[ ]
12. When using anti-spyware software, a computer is more likely to be protected (RESP3).	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Performance Expectancy (formative)</b>					
13. I would find the use of anti-spyware software useful in my job (PERF1).	[ ]	[ ]	[ ]	[ ]	[ ]
14. Using anti-spyware software enables me to accomplish tasks more quickly (PERF2).	[ ]	[ ]	[ ]	[ ]	[ ]
15. Using anti-spyware software increases my productivity (PERF3).	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Social Influence (formative)</b>					
16. People who influence my behavior think that I should use anti-spyware software (SINF1).	[ ]	[ ]	[ ]	[ ]	[ ]
17. In general, the University has supported using anti-spyware software (SINF2).	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Behavioral Intent (reflective)</b>					
18. I intend to use anti-spyware software in the next 3 months (BINT1).	[ ]	[ ]	[ ]	[ ]	[ ]
19. I predict I will use anti-spyware software in the next 3 months (BINT2).	[ ]	[ ]	[ ]	[ ]	[ ]
20. I plan to use anti-spyware software in the next 3 months (BINT3).	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Attitude (formative)</b>					
21. Anti-spyware software makes work more interesting (ATTI1).	[ ]	[ ]	[ ]	[ ]	[ ]
22. Working with anti-spyware software is fun (ATTI2).	[ ]	[ ]	[ ]	[ ]	[ ]
23. I like working with anti-spyware software (ATTI3).	[ ]	[ ]	[ ]	[ ]	[ ]
24. Working with anti-spyware software is enjoyable (ATTI4).	[ ]	[ ]	[ ]	[ ]	[ ]

### Section 3: Demographic Information

The demographic information in this section will only be used in aggregate form and will not be used to identify individual respondents. Please select only one item in each category. Experience refers to your experience using anti-spyware software. Department refers to the department in which you are employed or enrolled.

Gender	<input type="checkbox"/> male	Experience	<input type="checkbox"/> < 6 months	Age	<input type="checkbox"/> 18 to 29
	<input type="checkbox"/> female		<input type="checkbox"/> 6–12 months		<input type="checkbox"/> 30 to 39
			<input type="checkbox"/> > 1 year to 2 years		<input type="checkbox"/> 40 to 49
			<input type="checkbox"/> > 2 years to 3 years		<input type="checkbox"/> 50 to 59
			<input type="checkbox"/> > 3 years		<input type="checkbox"/> 60 and over
Education	<input type="checkbox"/> high school	Department	<input type="checkbox"/> COBI		
	<input type="checkbox"/> some college		<input type="checkbox"/> CVM		
	<input type="checkbox"/> bachelor's degree		<input type="checkbox"/> ITS		
	<input type="checkbox"/> master's degree		<input type="checkbox"/> AOCE		
	<input type="checkbox"/> doctorate		<input type="checkbox"/> other		
	<input type="checkbox"/> other				

---

Thank you for participating in this study.

## Appendix B

### Manipulation (Fear Appeal)

From the ITS Offices  
Principal Contact: Craig Martin  
Re: Spyware

Currently, 91% of all home PCs are infected with some kind of spyware. Spyware is a form of software that can install itself on computer systems with or without the consent of the computer's operator. Even anti-virus software, such as Norton Anti-virus, is useless in stopping a spyware attack. The effects of spyware may be disastrous, as some form of it may lead to fraud or identity theft.

Anti-spyware software provides a proven method for protecting against spyware. This software works automatically to detect and remove existing installations of spyware and to proactively guard against future intrusions. The software is easy to install and most come with an intuitive interface that provides a clear and consistent method for fine tuning the performance of the software to match the desires of the user.

It is recommended that all faculty, staff, and students of the University take the appropriate steps to obtain and install anti-spyware software. Freeware copies of the software are available on the University's ITS web site.

# Appendix C

## Results of Fear Appeal Manipulation Effectiveness and Test of Internal Validity

<b>Table C1. Results of Fear Appeal Manipulation Effectiveness</b>				
<b>Variable</b>	<b>Pre Test Mean</b>	<b>Post Test Mean</b>	<b>F-Test</b>	<b>Significance</b>
TSEV	3.597	3.930	13.719	p < 0.001
TSUS	3.228	3.692	9.521	p < 0.001
SEFF	3.544	3.748	9.026	p < 0.001
RESP	3.716	4.076	3.432	p < 0.001

TSEV = Threat Severity; TSUS = Threat Susceptibility; SEFF = Self-Efficacy; RESP = Response Efficacy

<b>Table C2. Test of Internal Validity</b>		
<b>Variable</b>	<b>F-Test</b>	<b>Significance</b>
TSEV	0.080	p > 0.10
TSUS	0.002	p > 0.10
SEFF	1.498	p > 0.10
RESP	0.063	p > 0.10

TSEV = Threat Severity; TSUS = Threat Susceptibility; SEFF = Self-Efficacy; RESP = Response Efficacy