

## Supplementary materials for the paper

# Usability of Antivirus Tools in a Threat Detection Scenario

Michael Körber, Anatoli Kalysch, Werner Massonne, Zinaida Benenson: [Usability of Antivirus Tools in a Threat Detection Scenario](#). Published at [IFIP SEC 2022](#)

Authors' version:

<https://www.cs1.tf.fau.de/files/2022/07/2022-koerber-antivirus-usability-sec22-authors-version.pdf>

## Interview Guide

### 1. Introduction

Hello, my name is [name1] and this is my colleague [name2]. We are investigating the usability of word processing programs. Thank you for helping us conduct our study. Before we begin, please read the consent form.

[PROVIDE CONSENT FORM, WAIT TILL THE PARTICIPANT FINISHED READING]

All data that we collect during the study will be kept strictly confidential and will only be seen by the researchers involved in the project and will be used in anonymous form. We would like to record the study so that we can access the video and interview data during the evaluation. If you agree, please sign the consent form.

First, we would like to connect your laptop to the lab computer via TeamViewer and then I will briefly explain the setup of the study.

[CONNECT PARTICIPANT'S LAPTOP TO WI-FI AND TO THE LAB COMPUTER]

[INSTALL AND CONFIGURE TEAM VIEWER]

The study is divided into three sections. First, we would like to ask you some questions about your previous experience with word processing programs.

After that, we will give you two numbered envelopes with tasks and USB drives needed for some of the tasks.

We will ask you to complete the tasks one by one in the order provided.

After the task completion, we would like to ask you a few more questions.

You can stop the experiment at any time and of course you will still receive your compensation.

Do you have any further questions before we start the experiment?

I would like to start the introductory interview now. Important: We are not testing you, we are testing the word processing program. We are interested in what you think about the topics addressed; there are no "right" and "wrong" answers. You can't get anything wrong either.

### 2. Pre-Session Interview (Cover Story)

[START AUDIO RECORDING]

Which word processing programs do you use?

Have you ever had a negative experience using a word processing program?

If yes: Can you tell us about one of these experiences?

[STOP AUDIO RECORDING]

### 3. User Study

Thank you very much. That was our short interview to get you started. Now I would like you to complete some tasks using your word processor.

In order not to distract you, we will leave you alone during the study, but can always call us if you have questions or get stuck at any point. We will be in the next room.

[HAND OVER THE TWO ENVELOPES WITH TASKS AND USB DRIVES]

[START SCREEN AND AUDIO RECORDING]

Please start with Task 1 and complete the work assignments in the provided order.

[LET PARTICIPANTS DO THE TASKS ALONE]

[IF PARTICIPANT LOOKS HELPLESS OR ASKS FOR HELP, GO IN AND CLARIFY SITUATION]

What just happened was the way we wanted it to happen. You don't have to worry about it. Is everything OK? I will now explain what this study is about.

[EXPLAIN THE REAL AIM OF THE USER STUDY]

How do you feel about the fact that you participated in the study although you were not informed about the actual aim of the study?

Is there anything else you would like to comment on?

[AFTER TASK COMPLETION OR INTERRUPTION: STOP SCREEN RECORDING]

### 4. Main Interview

Now we come to the last part of our study. We would like to ask you a few final questions before we wrap up the study.

#### a) User experience, part 1

Did you encounter any situation during the study where something unexpected happened? What do you think happened?

[If noticed the disappearance of the file] Where did the file go?

[If noticed AV notification]

Did you read the AV message?

If yes: Can you reproduce the content?

If no: Why do you think you did not read the message?

What do you think this message means?

[If AV notification not noticed]

[SHOW RECORDING OF SITE WITH AV MESSAGE]

What do you think happened there?

Where did the file go?

What do you think this message means?

If not already shown:

[SHOW RECORD FROM LOCATION WITH AV MESSAGE]

[HANDOVER AV MESSAGE RATING]

Please mark down how you feel about the antivirus message. Please explain your answer.

## **b) Debriefing (if not happened earlier)**

You probably guessed it by now: The actual goal of our study is not to investigate the usability of different word processing programs, but the usability of different antivirus software. We wanted to observe how you react to antivirus messages and to the removal of a test file of the antivirus software. The test file that triggered your antivirus software was completely harmless. For realistic results, we were unfortunately forced to keep the real target a secret from you. Is everything OK?

How do you feel about the fact that you participated in the study even though you were not informed about the real target of the study?

Is there anything else you would like to comment on?

## **c) User experience, part II**

Now that you know about the actual goal of this study, we would like to ask you a few more questions about it and about cybersecurity.

Did you find the antivirus message superfluous? Can you say more about it?

*Remark: this question was asked to assess the validity of study setup.*

At any point during recruitment or during the study, did you have the impression that this was not a usability test for word processing programs, but for antivirus software?

*Remark: this question was asked to assess risk level of the participants.*

Suppose your laptop was now infected. How do you assess this situation for you personally?

[HANDOVER VIRUS IMPACT RATING]

Please tell us why you chose this answer.

*Remark: this question was asked to assess the validity of study setup.*

Would you say that you would have reacted differently at home to the situation you experienced here than you did here in the lab?

If yes: Can you say more about this?

## **d) Experience with malware attacks**

In general, how do you protect yourself from the Internet threats?

Have you ever had a virus on your computer?

If yes:

How did you deal with it?

What was the end result of this story?

Was any data lost in the process?

How long did it take before you could use the computer again as usual?

*Remark: this question was asked to assess risk level of the participants.*

Overall, how would you rate the time it took until you were able to use your computer as usual again?

[HANDOVER VIRUS REMOVAL EFFORT RATING]

Can you say more about this?

How many times have you experienced a virus incident?

If not already mentioned:

Do you make backups of your data? Can you tell us more about this?

Has your antivirus tool ever found a virus?

If yes:

How did you become aware of it?

How did you deal with it?

What were the consequences?

How often did this happen?

### **e) Experience with AV tools**

Why do you use antivirus software? (F12)

Why do you use your current antivirus software?

How do you rate your antivirus software? Here your personal opinion is asked.

[HANDOVER ANTIVIRUS TOOL RATING]

Please explain your ratings.

How protected do you feel using your antivirus software?

[HANDOVER PROTECTION RATING]

Please explain your rating.

### **f) Wrap-up the study**

*Remark: this question was asked to assess the validity of the study setup.*

How often have you been in a situation where you copied multiple files at once from a USB flash drive to your computer?

[HANDOVER USB DRIVE USAGE RATING]

In general, how often do you use a USB flash drive in your daily life?

This brings us to the end of our study. We thank you very much for your participation. Do you have any final questions or comments?

[DISCONNECT LAPTOP FROM LAB COMPUTER]

[REMOVE TEAMVIEWER IF DESIRED]

[STOP AUDIO RECORDING]