

INDICATOR OF DECEPTION: RESPONSE TIME WHEN INQUIRED BY AN
AUTOMATED SCREENING KIOSK

By

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STATEMENT BY AUTHOR

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Abstract

An Automated Screening Kiosk (ASK), a non-invasive screening system, is used to conduct an altered Concealed Information Test (CIT), collecting measures to detect deceit. One of the many objectives of using the ASK is to determine whether response time is a viable measure for use in a CIT system. The time it takes for participants to respond to questions asked during the test could signal deception. The results from the coding of response times confirm the results from previous studies showing that guilty individuals take more time to respond when they see a threatening stimulus. More research needs to be done before we can accurately gauge the validity of using response time as a measure for detecting deception.

Purpose:

The study aims to determine whether the response times of individuals being asked questions indicate deception. Research has shown that guilty and innocent individuals behave differently when questioned [4]. It is also expected that the time it takes to respond to a concealed information test would differ between innocent and guilty individuals. With the assumption that the guilty person would reason more than does the innocent individual when inquired, the hypothesis is that guilty individuals should take longer time to respond to questions. The factors that will affect the response time are the following: participant's condition, participation day, and the foil charge. The condition of the participants was determined guilty or innocent by whether or not they possessed a mock explosive device. Participants took part in the experiment over a two day period. On the first day of participation, individuals should take longer to respond due to the lack of familiarity with the screening process. As a stimulus that elicits an autonomic response, the foil charge is either a critical or noncritical object – a guilty individual would see the word “Bombs” as a critical object while those who are innocent would not see that word as such. An analysis of recorded response times would yield a better understanding of how guilty and innocent individuals differ in their response and whether and how the various factors affect response times.

Relevance:

Results from the coding of response times provide useful data when testing automated, non-invasive screening technologies such as the Automated Screening Kiosk (ASK). The kiosk is designed to be able to conduct interviews and detect changes in arousal, behavior, and cognitive effort by using psychophysiological information

systems. The system is composed of a LCD and various sensors that non-invasively monitor the response of participants. Ocular data (pupillometry, blink rates and patterns, and eye movement patterns) are gathered using the EyeTech TM3 system. Kinesic data (rigidity of body movement) are captured using high definition recording. Vocalic data (voice pitch and response time) are recorded using a studio quality microphone. Capturing these measures can expose concealed information [2]. This paper centers on the vocalic component of the experimentation, namely response time.

Eller College of Management's Center for the Management of Information (CMI) is experimenting with the ASK system to test if it can effectively conduct a non-invasive Concealed Information Test (CIT), which has been used to ascertain whether or not a person is truthful. When compared to other methods of detecting deception, the CIT (also known as the Guilty Knowledge Test or GKT) is considered to have the greatest validity [3, 5]. Since concealed knowledge can include intentions, the CIT's standard format can be used for rapid screening contexts, where criminal activity is in progress or planned. The CIT draws on the theories of the orienting response, or the tendency for a person's attention to focus on significant stimuli [7, 19]. As the orienting reflex is an autonomic response, the orienting reflex cannot be easily controlled or altered [6, 8]. Personally significant stimuli such as hearing one's own name draws attention to that stimulus. The CIT is a method developed for the elicitation and detection of physiological response that is caused by the orienting reflex [8, 16].

Obtained through invasive procedures, current measures used for the CIT consist of Skin Conductance Response (SCR), respiration, and heart rate [2].

Implementing a quick and less intrusive method would make the examinee more at ease and decrease the time it takes to setup equipment used for invasive measures.

Methodology:

A holistic view of the experimentation with the ASK system is needed to put this paper in context. Students taking an introductory MIS course at the University of Arizona were recruited to take part in the ASK experiment. They received instructions telling them to pack a bag with mundane items and carry it to an office situated in a secure part of the building. Some of the students were instructed to build an explosive device and pack it into their bag. Before participants could enter the office, they went through a security screening process in which they interacted with the ASK system in a screening room. The ASK system does an eye scan and ask five CIT questions. The first four questions were the following: "The following items are not allowed beyond this point. Are you carrying any of these items?" At the end of each question, ASK's screen displays four boxes, each of which contains a word of a banned object. After the boxes are shown for 7.5 seconds after each of the first four questions, the participants respond with a "Yes" or "No". The first stimuli screen contains only items that participants are surely not carrying. The subsequent stimuli screens show a threatening object, including "Bombs," "Weapons, or "Explosives," in one of the four boxes. The final ASK question is the following: "The following people are wanted by local authorities. Are you familiar with any of these people?" Instead of displaying four words of objects, four faces are shown on the screen. Participants carrying bombs will recognize the individual as the person to whom they are directed to deliver the bomb in the instructions they read prior

to the experiment. The location of the eye is tracked throughout the whole screening process, and video and audio are recorded.

With the process of recording videos completed, C-BAS (C# Behavioral Annotation System) was used to code the response times of individuals. Developed at the University of Arizona's Center for the Management of Information, C-BAS is a behavioral annotation system that is designed to be easier to use than other proprietary coding systems and offers robust functionalities that enable the coder to accurately and efficiently code the response times. Using C-BAS saves time and helps reduce the error that can result from not using it. For example, if the coder chose to not use the software, recording response times would have required the frequent pressing of the pause button with a mouse and looking at the miniscule timestamp on the video in order to jot down the time lapsed between the end of each question and the beginning of each response. Furthermore, without the aid of C-BAS, the duration of the response time has to be calculated manually, potentially causing more errors. Among the many features it has, the software supports the ability to identify the time that certain behavioral events occur and mark how long a behavior is carried out. Determining the duration of the response times involves using C-BAS to record the time that a question ends and the moment when participants first respond to a question. Response times can be recorded using C-BAS by pressing a few designated keys, and the exact times are saved without the need to type them in. Another benefit of using C-BAS is that it automatically calculates the elapsed time between the end of questions and the beginning of the responses. Running C-BAS requires that the following are installed: Microsoft's .Net Framework, Microsoft SQL Server Compact Edition, and Windows Media Player. Before

the software can be used, the coder had to be acquainted with the following three file types associated with C-BAS: .cbas (C-BAS project files), .mtf (Master template file), and .ccf (C-BAS coding file). The .cbas file named “responsedelay” that stored all the coded data was created. This file contains information about cases (video or audio files being coded), the coder, and project preferences as well as raw events that are captured as each case is coded. The master template file (.mtf) contains the base annotation set for C-BAS and can be customized to suit specific needs. The master template file was used to create a coding file (.ccf) named “segments.” The master file contains the superset of behaviors that was coded while the coding file contains a subset of behaviors that contains unique key assignments for each event. To precisely record the response times using C-BAS, arbitrary letters to be pressed, “A” and “D”, were assigned when questions end and when individuals respond, respectively. The coding file stores the assignment of the keys for those events. The recorded response times saved in a .cbas file were exported to an excel file and has these attributes: CaseID, CaseName, CoderName, Class, Category, Type, Name, EventType, StartTime, EndTime, TimeDuration, StartFrame, EndFrame, FrameDuration, Value, and Timestamp (see **Appendix A**). In addition to this exported file, the response times were input into an excel file (see **Appendix B**). The videos used for the coding of the response time took sixteen days to record. The recording process started on November 8, 2010 and ended on December 9, 2010. Each of the sixteen videos ran from the early morning to the late afternoon. While the videos were displayed in C-BAS, the response times were recorded using the aforementioned keys. The response times for each video were grouped together in C-BAS by the date that the video was recorded and were

stored using Microsoft SQL Server Compact Edition. Most of the videos could fast forward to the video segments where the participants are asked questions by the automated screening kiosk, helping to increase the speed of the coding process. Nonetheless, two of the videos cannot fast forward or rewind and required the coder to wait for intervals ranging from thirty minutes to one hour before a participant shows up for the questioning. For these videos, the coder has to view through them nonstop for six to seven hours; otherwise, the coding process has to be restarted. For each participant, five questions need to be coded. In total, there are 63 guilty and 73 non-guilty individuals. Originally, an equal number of guilty and non-guilty individuals participated, yet some participants did not successfully complete the experiment and were not counted in the tally. After the coding was completed, statistical analysis using multilevel regression modeling was conducted on the response times with the assistance of Dr. Nathan Twyman (see **Appendix C**).

Multilevel (hierarchical) linear regression analysis is often used in social research and suits the research on response times, in which the data is hierarchically-structured. The use of nested data made it appropriate to use a multilevel regression model, which, in contrast to a simple linear regression model, allows for different regression coefficients for each predictor. Traditional multiple regression can be inadequate when the objective is to predict relationships that differ among groups. Traditional multiple regression will either try to independently estimate relationships, which can be problematic if there is not enough data, or will lump the groups together, ignoring potentially valuable differences among groups. A more powerful approach is to assume that the groups have a statistical distribution of their own, just as the error among

individual observations is assumed to come from a often normal distribution. Then the data in each group is placed together with all of the other data, so that the difference between the two extremes is considered. "Multilevel" or "hierarchical regression," and "mixed-effects modeling" can often be used to improve the quality of predictions.

Literature Review:

Automated Human Screening for Concealed Knowledge provides an overview of a study that involves the use of an altered Concealed Information Test (CIT) displayed on an Automated Screening Kiosk (ASK) to rapidly screen individuals [2]. The study's objective is to determine the feasibility of using CIT systems in lieu of or along with invasive screening technologies.

"Behavioral and Physiological Measures in the Detection of Concealed Information" examines the validity of the response time measure in the Concealed Information test and how it contributes to physiological detection. Findings in this study suggest that physiological and behavioral aspects of information detection are at least partly dissociated [1].

"Trial by Polygraph: Reconsidering the Use of the Guilty Knowledge Technique in Court" reconsiders the possibility using of GKT (Guilty Knowledge Test) polygraph test results as an aid in criminal courts. It shows that when properly administered, the GKT meets the four major Daubert criteria: testability, known error rates, peer review and publication, and general acceptance [3]. The paper states that the GKT stands on solid theoretical grounds and has empirical validity and that the inferences made on the basis of its results can be defended. The paper also discusses the major threats to the validity of the GKT and identifies ways to minimize the effects of these threats. The way

in which GKT should be applied is described. The conclusion was that the GKT could be used as admissible evidence in criminal courts.

“A Rigidity Detection System for the Guilty Knowledge Test” identifies rigidity as a possible indicator of deception in a Guilty Knowledge Test (GKT). Tracking movement during a Guilty Knowledge Test conducted after a mock crime, computer vision techniques were used to detect rigidity. The format for GKT allowed for more direct measurement by the system. The study demonstrated that individuals who committed a mock crime showed less minor, random movement during critical items versus non-critical items [4]. Applications of this work include the following: using it with criminal or investigative interviewing systems and secondary screening systems at ports of entry and modifying the GKT for automated job interviewing or migrant screening systems. The results appear to support behavioral control theory in that the deceivers’ strategic behavior can serve as an indicator of their deception.

"The validity of Psychophysiological Detection of Information with the Guilty Knowledge Test: A Meta-analytic Review" explains a study in which authors performed analysis based on 169 conditions to estimate the validity of the Guilty Knowledge Test (GKT) with the electrodermal measure [5]. The mock-crime studies produced the highest average effect size. Motivational instructions, deceptive verbal responses, and the use of at least 5 questions were the additional moderators that enhanced validity.

“Combining Physiological Measures in the Detection of Concealed Information” provides an overview of meta-analytic research that has confirmed that skin conductance response (SCR) measures have high validity for the detection of concealed information [6]. Research has provided evidence for the validity of two other

autonomic measures: Heart rate (HR) and Respiration Line Length (RLL). The report compared SCR detection efficiency with HR and RLL, and investigated whether HR and RLL provide incremental validity to electrodermal responses. Analyses were based on data from 7 different samples involving 275 guilty and 53 innocent examinees. Results revealed that the area under the ROC curve was much higher for SCR than for HR and RLL. A weighted combination of these measures using a logistic regression model yielded slightly larger validity coefficients than the best single measure. These results were stable across different protocols and various samples.

"Higher Nervous Functions - Orienting Reflex" explains how the orienting reflex is a complex system that includes the activities of different brain areas. It states that the orienting reflex is a response to new events and depends upon elaboration of a nervous model of stimulus and the mismatch between the model and a new stimulus [7]. The paper mentions that the nervous system is fixated on stimulus traces. The cause of the orienting response is the mismatch of impulses and signals reaching neurons. A repetitive stimulus elicits certain responses in the brain. The orienting reflex converts nonresponsive neurons into responsive neurons.

"Psychology and Lie Detector Industry" evaluates the appropriateness of using polygraphic interrogation in different scenarios, such as during the pre-employment screening process and criminal investigation. Though the polygraphic method known as The Guilty Knowledge Technique appears to have high validity, professional polygraphers may not have experience using it, and its range of applicability and its validity remain questioned. What is known is that the GKT is unsuitable for employee screening due to the fact that a high proportion of those who fail will be false-positives

[8]. During the employee screening process in the private sector, if an innocent person fails the lie test and does not get the job, undue hardship would result. However, the use of polygraphic interrogation in criminal investigation is deemed justifiable, since individuals are more likely to lie, and the penalty for the false-positive is less severe. Thus, the use of the Guilty Knowledge Test during criminal investigation should help improve the efficiency of police work as well as protect the innocent from false prosecution.

Results:

There was an interaction effect between the participant's condition (i.e., guilty or innocent), participation day, and foil charge (e.g., critical items and nonthreatening objects). Notably, the condition by itself did not have an effect on the response time. When the word "Bombs" was presented second, the response time showed a slight decrease, indicating that order of presentation had an effect. Participants responded more slowly when a foil contained critical item. Response times decreased on the second day likely due to greater familiarity with the process. Nonetheless, guilty participants taking part in the experiment for the second time took longer to respond to foils with threatening items when compared to those who were innocent. Responding to foils with critical items took more time for all participants.

The average time it took for an individual to respond was 3.17 seconds when factors affecting response time were taken into account (see **Appendix D**). On the second day of the experiment, there was a 0.7 seconds decrease in response time on average. The threatening stimulus displayed on the screen, such as the word "bomb", resulted in a 0.5 second decrease in response time. When participants did the

experiment for the second time, were presented with a threatening item just as in the first time, and possessed the bomb in the bag, the time it took them to respond increased by 0.4 seconds.

Limitations:

The coding process involved quickly pressing certain keys when the questions ended and when participants responded. This may result in errors, as the coder may press a key too soon or too late. Thus, the recorded response times will have a slight margin of error that should be no more than a fraction of a second. The C-BAS software allows the coder to delete coded response times that are clearly incorrect due to the pressing of keys at the wrong time. Looking at the videos of the individuals responding while listening to their response made it difficult sometimes to precisely record the moment when they start responding, since the coder may press a key when the participants' lips start moving, but they may not have uttered a word until a fraction of a second later. This difficulty can be alleviated by closing the eyes when the kiosk asks questions, helping to improve concentration. Doing so reduces the cognitive load of having to keep track of both visual and auditory information.

Since each question ends with a multi-syllable word, it is sometimes easy to press the key before the word is completely pronounced, though it should have been pressed right after ASK utters the entire word. The accuracy of the coding of response times might be improved if questions end with a single-syllable word.

It should be kept in mind that the results from this study may not reflect what happens in a real life scenario. In other words, a guilty individual possessing a real bomb being inquired by an automated screening system would likely respond in a way

different from a participant who is asked the same questions by the same system in a simulated environment. The extent to which the results from this study can be applied to a true situation remains to be determined. The coded response times does indicate, however, that there is a difference in the time it takes to respond to an automated concealed information test between guilty and innocent individuals.

Future Research:

Future research should resolve the limitations of manually coding the response times. The use of voice recognition software that can accurately record the response times would confirm that the data obtained in this experiment is valid. As previous research shows that the response time is somewhat less useful than other measure used in CIT, more research on response time needs to be done.

Conclusion:

While some of the results of the statistical analysis are inconclusive, the finding that guilty participants presented with a threatening stimulus on the second day would take longer to respond matches the experiment's hypothesis and is consistent with results from previous research showing that participants took longer time to respond to a threatening stimulus. As expected, guilty individuals hesitated in their response when asked if they carried weapons. The significance of the results lies in the potential of using response time for automated screening systems.

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Appendix A

Exported C-BAS File Snapshot

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Case	CaseName	CoderName	Class	Category	Type	Name	EventType	StartTime	EndTime	TimeDurat	StartFrame	EndFrame	FrameD Value
2	4	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2870.901	2872.334	1.433333	86127	86170	43 202-1
3	4	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2884.642	2885.932	1.290083	86539	86578	39 202-2
4	4	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2898.863	2900.933	2.070125	86966	87028	62 202-3
5	4	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2913.553	2914.954	1.400896	87407	87449	42 202-4
6	4	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2928.459	2930.069	1.610104	87854	87902	48 202-5
7	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2869.678	2871.642	1.964042	86090	86149	59 202-1
8	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2884.195	2885.875	1.680063	86526	86576	50 202-2
9	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2898.599	2900.599	2.000021	86958	87018	60 202-3
10	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2913.149	2914.632	1.483833	87394	87439	45 202-4
11	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	2928.254	2930.009	1.755042	87848	87900	52 202-5
12	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	10827.34	10832.61	5.272542	324820	324978	158 203-1
13	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	10841.89	10844.34	2.444063	325257	325330	73 203-2
14	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	10856.44	10859.77	3.333104	325693	325793	100 203-3
15	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	10870.95	10874.03	3.081083	326129	326221	92 203-4
16	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	10885.94	10889.2	3.260083	326578	326676	98 203-5
17	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	13760.45	13765.24	4.781979	412814	412957	143 204-1
18	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	13774.84	13778.19	3.344083	413245	413346	101 204-2
19	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	13789.34	13792.16	2.823083	413680	413765	85 204-3
20	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	13803.89	13806.79	2.903062	414117	414204	87 204-4
21	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	13818.99	13822.17	3.178083	414570	414665	95 204-5
22	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	16773.04	16778.49	5.455167	503191	503355	164 1-May
23	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	16787.58	16790.83	3.246062	503627	503725	98 2-May
24	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	16802.11	16804.29	2.180083	504063	504129	66 3-May
25	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	16816.53	16818.48	1.950042	504496	504554	58 4-May
26	23	2010-11-08A	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	16831.64	16834.56	2.921083	504949	505037	88 5-May
27	25	11/9/2010	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	1212.19	1214.67	2.480062	36366	36440	74 1-Jun
28	25	11/9/2010	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	1226.671	1228.632	1.961042	36800	36859	59 2-Jun
29	25	11/9/2010	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	1241.192	1243.203	2.011042	37236	37296	60 3-Jun
30	25	11/9/2010	Irvin Hsu	Segments	Segments	segment	Begin Seg	Segments	1255.902	1258.133	2.231042	37677	37744	67 4-Jun

Appendix B

Response Time Table

Participant ID	Screening Date / Time	Participant Status	Participation Day	Response Time				
				Q1	Q2	Q3	Q4	Q5
201	11/8/2010 8:13	DQ12	1					
202	11/8/2010 8:26	Complete	1	1.964	1.68	2	1.484	1.755
2	11/8/2010 8:46	DQ12-Y	1					
3	11/8/2010 10:25	DQ12-Y	1					
203	11/8/2010 10:38	Complete	1	5.273	2.444	3.333	3.081	3.26
4	11/8/2010 11:17	DQ12-ETP	1					
204	11/8/2010 11:27	Complete	1	4.782	3.344	2.823	2.903	3.178
5	11/8/2010 12:17	Complete	1	5.455	3.246	2.18	1.95	2.921
205	11/8/2010 15:00	DQ1	1					
6	11/9/2010 8:14	Complete	1	2.48	1.961	2.011	2.231	2.195
7	11/9/2010 8:49	Complete	1	3.294	2.803	3.35	2.983	2.683
206	11/9/2010 9:25	Complete	1	3.294	2.294	2.131	1.861	3.457
204	11/9/2010 9:43	Complete	2	2.842	2.462	2.101	1.901	2.094
203	11/9/2010 9:46	Complete	2	3.052	2.832	2.434	2.511	2.903
8	11/9/2010 10:21	Complete	1	2.87	2.283	1.971	2.161	1.931
207	11/9/2010 10:30	Complete	1	3.467	3.364	2.971	3.312	3.054
2	11/9/2010 10:46	DQ12-Y	2					
9	11/9/2010 10:58	Complete	1	2.871	1.851	2.081	1.762	1.645
10	11/9/2010 11:51	Complete	1	4.525	3.011	2.332	2.362	2.853
5	11/9/2010 12:53	Complete	2	1.783	2.281	1.471	1.733	2.3
4	11/9/2010 13:03	DQ12-ETP	2					
205	11/9/2010 13:12	DQ1	2					
202	11/9/2010 13:25	Complete	2	1.37	1.49	1.842	2.351	1.612
208	11/9/2010 13:55	Complete	1	3.473	2.62	3.083	2.571	3.114
3	11/9/2010 14:36	DQ12-Y	2					
209	11/9/2010 14:57	Complete	1	3.121	2.081	2.581	2.22	2.813
11	11/9/2010 16:17	Complete	1	2.962	2.262	2.24	2.405	2.443
6	11/10/2010 8:08	Complete	2	2.267	2.6	3.333	2.9	2.5

12	11/10/2010 8:30	Complete	1	4.396	2.502	2.251	1.851	3.271
210	11/10/2010 8:51	Complete	1	2.912	2.323	2.511	2.151	2.512
13	11/10/2010 9:04	Complete	1	2.54	1.71	2.271	1.741	2.27
211	11/10/2010 9:58	Complete	1	2.222	2.191	1.941	2.101	2.282
207	11/10/2010 10:21	Complete	2	2.913	3.321	3.573	3.012	3.563
206	11/10/2010 10:46	Complete	2	2.66	2.343	1.961	2.062	2.252
208	11/10/2010 10:54	Complete	2	2.611	2.635	2.4	2.267	2.9
209	11/10/2010 11:22	Complete	2	1.91	1.911	2.17	2.041	1.69
14	11/10/2010 11:30	Complete	1	3.173	2.262	2.032	1.87	1.85
11	11/10/2010 11:39	Complete	2	2.173	1.941	1.8	1.954	2.78
7	11/10/2010 12:49	Complete	2	3.11	2.662	2.533	2.212	2.352
9	11/10/2010 13:12	Complete	2	2.67	2.191	2.182	2.111	2.522
10	11/10/2010 13:34	Complete	2	2.482	2.466	2.013	2.074	2.58
8	11/10/2010 13:52	Complete	2	1.82	3.271	3.003	3.094	3.324
212	11/10/2010 14:17	Complete	1	2.372	3.361	4.137	3.661	2.703
212	11/11/2010 8:24	Complete	2	4.062	2.152	2.165	2.531	2.843
14	11/11/2010 8:32	Complete	2	2.131	1.49	2.531	1.931	1.611
13	11/11/2010 8:47	Complete	2	1.68	2.382	2.07	2.04	3.39
12	11/11/2010 8:57	Complete	2	1.941	2.183	1.931	1.742	2.612
210	11/11/2010 9:13	Complete	2	1.767	2.233	1.767	1.733	1.533
15	11/15/2010 8:14	Complete	1	3.694	3.961	2.745	3.021	4.086
213	11/15/2010 8:19	Complete	1	3.428	2.315	2.55	2.44	2.752
214	11/15/2010 8:43	Complete	1	2.836	2.324	2.861	2.271	2.59
16	11/15/2010 8:48	DQ12-P	1					
215	11/15/2010 8:55	Complete	1	4.216	2.564	3.191	2.362	1.961
17	11/15/2010 9:32	Complete	1					
216	11/15/2010 10:12	Complete	1	2.461	2.901	2.635	2.962	2.601
18	11/15/2010 10:19	DQ12-Y	1					
217	11/15/2010 10:42	DQ12	1					
19	11/15/2010 10:46	Complete	1	4.074	3.032	3.041	4.022	3.633
20	11/15/2010 11:05	Complete	1	3.462	2.624	2.511	2.267	1.69
218	11/15/2010 11:28	DQ12	1					

21	11/15/2010 11:33	DQ12-Y	1						
219	11/15/2010 11:55	Complete	1	4.135	3.161	3.231	3.862	2.69	
220	11/15/2010 12:07	Complete	1	2.183	2.153	1.76	1.611	2.422	
22	11/15/2010 12:11	DQ12-Y	1						
221	11/15/2010 13:09	Complete	1	3.734	2.885	3.536	2.79	2.626	
23	11/15/2010 13:21	Complete	1	4.222	2.371	2.951	2.491	2.19	
24	11/15/2010 13:37	Complete	1	2.062	1.621	2.035	2.133	2.76	
222	11/15/2010 13:41	Complete	1	1.874	2.08	2.081	2.213	1.832	
25	11/15/2010 14:02	DQ1-ETP	1						
223	11/15/2010 14:07	Complete	1	4.182	1.88	1.762	2.223	2.18	
26	11/15/2010 14:27	Complete	1	3.184	2.522	2.49	2.47	2.262	
224	11/15/2010 14:37	Complete	1	2.68	2.021	2.06	2.13		
225	11/15/2010 14:50	Complete	1	3.651	2.503	2.661	2.741	2.913	
27	11/15/2010 14:54	Complete	1	2.183	1.77	1.771	1.63	2.864	
213	11/16/2010 8:09	Complete	2	2.291	2.71	2.641	2.412	2.24	
28	11/16/2010 8:15	Complete	1	4.082	2.88	2.35	2.451	2.76	
225	11/16/2010 8:31	Complete	2	3.231	2.771	2.714	1.98		
215	11/16/2010 8:40	Complete	2	3.124	2.541	2.104	2.391	2.45	
220	11/16/2010 8:54	Complete	2	1.7	1.571	1.83	1.815	1.91	
16	11/16/2010 9:01	DQ12-P	2						
214	11/16/2010 9:06	Complete	2	2.222	2.201	2.31	2.023	2.131	
216	11/16/2010 9:27	Complete	2	2.711	2.703	2.63	2.581	3.142	
221	11/16/2010 9:32	Complete	2	3.161	2.783	2.896	2.867	3.132	
29	11/16/2010 9:36	Complete	1	3.175	3.153	2.721	2.113	3.851	
224	11/16/2010 9:40	Complete	2	2.743	2.013	1.941	2.081	2.534	
219	11/16/2010 10:44	Complete	2	2.651	2.291	2.812	1.923	2.221	
222	11/16/2010 11:25	Complete	2	1.813	1.69	1.673	2.03	1.611	
26	11/16/2010 11:29	Complete	2	2.552	2.18	2.22	1.9	1.751	
19	11/16/2010 11:38	Complete	2	2.703	2.352	1.991	3.123	4.071	
25	11/16/2010 11:55	DQ1-ETP	2						
20	11/16/2010 12:01	Complete	2	1.421	1.551	1.431	1.471	1.38	
15	11/16/2010 12:58	Complete	2	2.853	2.851	2.652	2.86	2.885	

23	11/16/2010 13:19	Complete	2	4.242	3.534	2.981	3.243	3.744
17	11/16/2010 13:26	Complete	2	2.51	2.024	2.06	2.433	1.991
223	11/16/2010 13:30	Complete	2	2.523	2.252	2.136	2.031	2.62
226	11/17/2010 8:24	Complete	1	2.862	2.665	2.763	2.714	2.542
30		DQ12	1					
31	11/17/2010 8:28	Complete	1	2.811	5.525	2.571	1.692	2.402
32	11/17/2010 8:48	DQ12	1					
227	11/17/2010 8:54	Complete	1	3.2	2.63	2.41	2.612	2.35
33	11/17/2010 9:08	Complete	1	2.82	2.461	2.51	3.114	2.771
228	11/17/2010 9:16	Complete	1	2.39	2	1.91	1.8	2.625
34	11/17/2010 9:31	DQ12-P	1					
229	11/17/2010 9:46	Complete	1	2.88	2.17	2.3	2.17	2.27
35	11/17/2010 10:03	Complete	1	1.6	1.84	2.232	2.082	3.084
230	11/17/2010 10:14	Complete	1	2.515	2.01	1.72	2.191	1.741
231	11/17/2010 10:29	Complete	1	3.432	2.21	2.37	1.98	2.36
232	11/17/2010 10:39	Complete	1	2.47	2.141	3.001	2.07	2.511
36	11/17/2010 10:44	DQ12-ETP?	1					
233	11/17/2010 10:57	Complete	1	3.732	2.311	2.31	1.941	2.47
37	11/17/2010 11:01	Complete	1	1.942	2.33	2.432	2.3	2.08
29	11/17/2010 11:11	Complete	2	2.383	2.09	2.403	2.34	3.02
234	11/17/2010 11:15	Complete	1	3.344	2.85	2.61	2.431	2.574
38	11/17/2010 11:19	DQ12	1					
39	11/17/2010 11:44	DQ12-Y	1					
235	11/17/2010 11:50	Complete	1	2.844	1.881	2.38	2.5	2.37
40	11/17/2010 12:05	DQ12-Y	1					
28	11/17/2010 12:36	Complete	2	1.63	1.471	0.961	2.073	1.28
236	11/17/2010 13:05	Complete	1	2.273	2	2.221	2.183	2.072
41	11/17/2010 13:09	Complete	1	2.764	2.82	3.18	3.09	2.95
237	11/17/2010 13:26	Complete	1	3.382	4.512	4.231	3.463	2.011
42	11/17/2010 13:49	Complete	1	3.171	2.147	1.94	1.57	2.19
238	11/17/2010 13:53	Complete	1	4.191	2.991	2.532	3.08	2.792
239	11/17/2010 14:05	Complete	1	2.821	2.381	2.273	3.031	2.232

43	11/17/2010 14:08	Complete	1	3.253	1.831	1.832	1.67	1.581
240	11/17/2010 14:26	Complete	1	3.281	1.832	2.27	2.541	3.142
44	11/17/2010 14:30	Complete	1	3.454	2.41	2.793	2.762	2.573
241	11/17/2010 14:41	Complete	1	2.611	2.363	2.762	2.392	2.762
242	11/17/2010 14:54	DQ12	1					
45	11/17/2010 14:58	Complete	1	1.733	1.26	1.6	1.74	2.311
234	11/18/2010 8:02	Complete	2	2.63	2.272	2.772	2.671	2.181
238	11/18/2010 8:09	Complete	2	3.092	2.385	2.765	3.531	3.163
33	11/18/2010 8:14	Complete	2	2.951	3.02	3.031	3.533	3.37
44	11/18/2010 8:23	Complete	2	2.899	2.821	2.694	2.772	3.422
46	11/18/2010 8:27	Complete	1	2.719	3.043	2.161	2.27	3.05
235	11/18/2010 8:38	Complete	2	1.78	2.593	1.801	2.241	3.488
31	11/18/2010 8:43	Complete	2	1.621	1.741	1.709	1.342	1.732
236	11/18/2010 8:48	Complete	2	2.05	1.672	1.704	1.981	1.652
239	11/18/2010 8:52	Complete	2	2.861	2.394	2.571	2.622	2.273
38	11/18/2010 9:06	DQ12	2					
240	11/18/2010 9:15	Complete	2	2.42	1.902	2.02	2	2.191
229	11/18/2010 9:28	Complete	2	2.57	1.94	2.695	1.933	2.925
227	11/18/2010 9:33	Complete	2	2.162	2.703	2.791	2.901	1.429
34	11/18/2010 9:38	DQ12-P	2					
47	11/18/2010 10:03	Complete	1	4.574	4.34	4.603	3.5	2.9
230	11/18/2010 10:09	Complete	2	1.963	1.36	1.761	1.551	1.52
226	11/18/2010 10:33	Complete	2	2.269	2.3	2.34	2.26	2.2
231	11/18/2010 10:38	Complete	2	2.36	1.991	1.951	2.05	2.532
45	11/18/2010 10:45	Complete	2	1.801	1.873	1.76	1.982	2.6
232	11/18/2010 11:00	Complete	2	2.381	2.011	1.481	2.242	2.502
37	11/18/2010 11:06	Complete	2	2.28	2.131	2.805	2.252	2.343
237	11/18/2010 11:32	Complete	2	4.643	4.254	3.134	3.691	2.17
36	11/18/2010 11:38	DQ12-ETP?	2					
228	11/18/2010 13:05	Complete	2	1.85	1.731	1.66	2.029	1.98
41	11/18/2010 13:09	Complete	2	2.981	2.861	3.454	2.844	3.232
35	11/18/2010 13:18	Complete	2	2.751	2.09	2.869	2.254	3.37

43	11/18/2010 13:23	Complete	2	2.751	2.751	2.563	2.16	2.451
42	11/18/2010 13:30	Complete	2	1.512	2.142	2.522	2.47	2.694
241	11/18/2010 13:35	Complete	2	2.371	1.591	1.773	1.831	3.18
233	11/18/2010 13:40	Complete	2	2.813	2.13	1.419	1.549	2.321
48	11/22/2010 8:35	Complete	1	3.503	4.27	2.382	3.141	4.211
243	11/22/2010 8:49	DQ12	1					
49	11/22/2010 8:54	DQ1-ETP	1					
50	11/22/2010 9:22	Complete	1	4.061	3.226	3.444	3.443	3.896
51	11/22/2010 9:56	DQ12	1					
244	11/22/2010 10:04	Complete	1	2.713	2.262	2.11	1.931	2.031
52	11/22/2010 10:29	Complete	1	4.055	2.9	2.631	2.582	2.581
53	11/22/2010 10:54	DQ2-ETP	1					
245	11/22/2010 10:59	DQ2	1					
246	11/22/2010 11:07	Complete	1	2.09	2.741	2.63	2.982	2.721
247	11/22/2010 11:30	DQ12	1					
54	11/22/2010 11:36	Complete	1	5.184	3.222	3.081	3.443	3.401
248	11/22/2010 11:45	DQ12	1					
249	11/22/2010 12:05	Complete	1	2.323	1.89	1.832	2.131	2.25
55	11/22/2010 12:11	Complete	1	3.141	2.731	3.081	3.062	3.591
250	11/22/2010 12:16	Complete	1	3.533	2.481	2.551	3.362	3.193
251	11/22/2010 13:01	Complete	1	3.312	3.281	3.101	2.601	3.265
56	11/22/2010 13:08	Complete	1	3.111	3.912	4.252	3.38	3.933
57	11/22/2010 13:29	Complete	1	2.502	2.573	2.86	2.501	3.07
252	11/22/2010 13:38	Complete	1	3.241	2.741	2.32	2.56	2.13
58	11/22/2010 13:48	Complete	1	2.89	3.132	2.7	2.96	2.421
253	11/22/2010 13:59	Complete	1	2.711	2.95	2.933	3.253	3.362
254	11/22/2010 14:08	Complete	1	3.18	2.59	2.651	2.503	2.123
59	11/22/2010 14:15	Complete	1	3.302	2.963	2.611	2.47	2.671
60	11/22/2010 14:32	Complete	1	3.421	3.172	2.822	2.521	2.73
255	11/22/2010 14:46	Complete	1	3.263	2.84	2.88	3.07	4.36
61	11/22/2010 14:50	Complete	1	4.23	1.79	2.36	1.901	2.101
256	11/22/2010 15:04	Complete	1	3.802	2.973	3.04	3.436	3.44

48	11/23/2010 8:22	Complete	2	2.32	2.536	4.673	4.967	3.782
53	11/23/2010 8:46	DQ2-ETP	2					
49	11/23/2010 8:53	DQ1-ETP	2					
56	11/23/2010 9:08	Complete	2	4.336	4.154	5.095	3.991	3.465
54	11/23/2010 9:22	Complete	2	2.967	1.31	1.581	2.946	3.141
60	11/23/2010 9:42	Complete	2	2.55	1.971	2.173	2.22	3.36
245	11/23/2010 10:10	DQ2	2					
62	11/23/2010 10:16	DQ12	1					
251	11/23/2010 10:20	Complete	2	3.005	2.62	2.902	2.461	2.821
52	11/23/2010 10:37	Complete	2	2.331	2.453	2.021	2.567	2.367
63	11/23/2010 10:57	DQ12-Y	1					
55	11/23/2010 11:03	Complete	2	1.651	2.171	2.684	2.5	3.673
246	11/23/2010 11:08	Complete	2	2.48	2.216	2.531	2.48	2.481
252	11/23/2010 11:14	Complete	2	2.4	2.08	2.462	2.401	2.142
254	11/23/2010 11:24	Complete	2	2.94	3.155	2.091	2.63	1.661
59	11/23/2010 11:27	Complete	2	2.68	2.77	2.885	2.693	3.051
244	11/23/2010 11:53	Complete	2	1.973	1.88	1.92	1.58	1.89
58	11/23/2010 12:04	Complete	2	2.55	3.391	3.213	3.391	2.65
57	11/23/2010 13:17	Complete	2	2.41	2.673	2.242	2.09	2.49
256	11/23/2010 13:48	Complete	2	2.953	2.481	2.63	3.2	3.01
61	11/23/2010 13:54	Complete	2	2.381	2.278	1.8	2.313	2.822
249	11/23/2010 14:00	Complete	2	1.74	1.541	1.431	1.72	1.85
250	11/23/2010 14:07	Complete	2	2.241	2.63	2.9	2.962	2.273
253	11/23/2010 14:13	Complete	2	3.011	2.12	2.28	2.11	2.603
64	11/23/2010 14:27	DQ12-Y	1					
50	11/23/2010 14:32	Complete	2	3.272	3.3	3.03	2.951	3.372
257	11/23/2010 14:50	Complete	1	4.084	4.411	2.78	3.881	3.803
65	11/29/2010 8:24	Complete	1	2.324	2.191	1.961	2.25	2.411
66	11/29/2010 8:51	Complete	1	4.698	3.101	3.201	3.054	2.483
258	11/29/2010 8:55	Complete	1	3.331	2.243	2.542	2.5	2.502
259	11/29/2010 9:05	Complete	1	3.232	2.385	2.46	2.35	2.011
67	11/29/2010 9:13	Complete	1	2.91	2.703	3.055	2.982	2.855

260	11/29/2010 9:35	Complete	1	3.703	2.53	2.101	2.5	1.894
68	11/29/2010 9:45	Complete	1	6.011	2.542	2.501	1.741	3.006
261	11/29/2010 9:53	Complete	1	3.863	5.512	3.88	3.172	1.983
262	11/29/2010 10:24	Complete	1	3.13	2.191	2.081	3.01	2.19
69	11/29/2010 10:30	Complete	1	4.113	3.091	2.89	3.65	2.805
263	11/29/2010 10:37	Complete	1	3.352	3.571	2.341	4.113	3.941
70	11/29/2010 10:52	DQ12-ETP?	1					
71	11/29/2010 11:10	Complete	1	3.115	3.3	2.653	3.051	3.643
264	11/29/2010 11:20	Complete	1	2.981	3.361	2.591	2.711	2.98
72	11/29/2010 12:10	Complete	1	2.944	2.536	2.482	2.636	2.543
73	11/29/2010 12:44	Complete	1	4.56	2.723	2.445	2.424	2.484
265	11/29/2010 12:49	Complete	1	2.611	2.441	2.442	2.342	2.471
266	11/29/2010 13:30	Complete	1	2.539	2.444	2.201	2.451	2.11
74	11/29/2010 13:36	DQ12-Y	1					
267	11/29/2010 13:51	Complete	1	2.864	2.721	3.282	3.023	3.784
75	11/29/2010 13:58	Complete	1	2.953	1.951	2.63	2.543	3.333
268	11/29/2010 14:05	Complete	1	2.312	2.144	2.714	3.69	2.981
76	11/29/2010 14:20	Complete	1	3.272	2.334	3.166	2.252	3.58
269	11/29/2010 14:29	Complete	1	4.002	3.404	2.06	6.405	2.942
77	11/29/2010 14:36	Complete	1	3.613	2.632	2.662	2.704	2.231
78	11/29/2010 15:04	Complete	1	3.11	2.431	2.402	2.221	3.005
265	11/30/2010 8:24	Complete	2	1.79	1.651	1.28	1.58	1.5
266	11/30/2010 8:37	Complete	2	2.48	2.801	2.43	2.321	1.61
73	11/30/2010 8:45	Complete	2	2.26	2.101	2.12	2.362	2.441
259	11/30/2010 9:05	Complete	2	2.232	1.971	2.151	2.531	3.402
71	11/30/2010 9:12	Complete	2	1.492	2.323	2.414	2.42	2.231
260	11/30/2010 9:19	Complete	2	1.963	1.571	1.321	1.77	1.442
267	11/30/2010 9:23	Complete	2	2.502	3.093	3.03	3.302	3.162
261	11/30/2010 9:30	Complete	2	2.511	2.132	2.02	2.031	1.67
69	11/30/2010 9:34	Complete	2	2.04	2.381	1.92	1.991	2.21
65	11/30/2010 9:42	Complete	2	2.031	2.16	2.463	3.022	2.832
262	11/30/2010 9:54	Complete	2	1.952	1.812	1.57	1.641	1.47

68	11/30/2010 10:00	Complete	2	2.143	1.661	2.512	1.86	3.724
67	11/30/2010 10:17	Complete	2	3.144	3.403	3.595	3.213	3.641
269	11/30/2010 10:24	Complete	2	1.892	2.403	3.253	3.442	2.681
76	11/30/2010 10:33	Complete	2	1.812	2.342	1.465	1.743	1.711
72	11/30/2010 10:41	Complete	2	3.552	3.07	2.752	2.39	2.552
268	11/30/2010 10:48	Complete	2	2.561	2.452	2.261	2.441	2.333
78	11/30/2010 11:37	Complete	2	2.205	2.08	2.28	2.321	2.111
70	11/30/2010 11:55	DQ12-ETP?	2					
79	11/30/2010 12:00	DQ12-ETP	1					
77	11/30/2010 12:39	Complete	2	2.4	2.112	1.95	2.221	1.831
263	11/30/2010 12:54	Complete	2	3.033	2.313	3.814	2.732	2.592
270	11/30/2010 13:17	Complete	1	2.482	2.561	2.212	2.305	1.941
80	11/30/2010 13:55	Complete	1	4.343	3.984	3.914	3.753	5.005
264	11/30/2010 14:09	Complete	2	2.393	2.574	2.863	2.984	3.212
81	12/6/2010 9:08	DQ2	1					
82	12/6/2010 9:26	DQ2-ETP	1					
271	12/6/2010 9:39	Complete	1	2.301	2.131	2.3	1.92	2.33
272	12/6/2010 10:04	Complete	1	3.091	2.531	1.911	1.64	1.811
83	12/6/2010 10:18	Complete	1	2.351	2.543	3.392	3.393	2.652
273	12/6/2010 10:25	Complete	1	2.491	1.852	1.781	1.962	1.79
274	12/6/2010 10:43	Complete	1	7.965	5.105	7.805	5.035	2.846
84	12/6/2010 10:48	Complete	1	2.982	2.774	2.44	2.512	2.291
85	12/6/2010 11:29	Complete	1	3.993	3.293	2.993	2.971	4.69
276	12/6/2010 11:41	Complete	1	2.99	2.691	2.501	2.401	2.871
275	12/6/2010 11:46	Complete	1	3.352	3.202	2.691	2.483	2.53
86	12/6/2010 12:17	Complete	1	2.421	2.231	2.292	3.202	2.765
274	12/7/2010 9:14	Complete	2	3.493	3.774	5.793	7.126	6.243
82	12/7/2010 9:31	DQ2-ETP	2					
85	12/7/2010 9:45	Complete	2	4.363	4.265	4.334	4.834	4.691
277	12/7/2010 9:53	Complete	1	2.741	2.171	2.72	3.091	2.712
271	12/7/2010 10:21	Complete	2	1.773	1.352	1.581	1.761	1.661
84	12/7/2010 10:28	Complete	2	1.91	2.421	2.754	2.683	3.522

86	12/7/2010 10:35	Complete	2	2.59	2.6	3.434	3.61	3.193
83	12/7/2010 10:41	Complete	2	2.15	2.98	2.845	3.536	3.111
278	12/7/2010 10:52	Complete	1	3.234	2.17	2.121	2.551	1.724
81	12/7/2010 10:57	DQ2	2					
276	12/7/2010 11:38	Complete	2	2.751	3.093	2.98	3.182	3.101
275	12/7/2010 11:43	Complete	2	2.45	2.012	1.93	1.691	2.033
273	12/7/2010 11:52	Complete	2	2.022	2.944	1.711	1.792	2.002
272	12/7/2010 11:56	Complete	2	1.752	1.623	1.6	1.312	1.44
279	12/8/2010 8:28	Complete	1	4.35	3.421	3.142	3.73	3.811
87	12/8/2010 8:32	Complete	1	2.881	2.764	2.383	2.615	2.611
88	12/8/2010 9:09	Complete	1	3.669	2.871	2.763	2.831	3.351
280	12/8/2010 9:24	Complete	1	3.306	2.541	2.591	2.661	2.143
89	12/8/2010 9:30	DQ2	1					
281	12/8/2010 9:44	DQ2	1					
90	12/8/2010 10:31	DQ2-ETP	1					
91	12/8/2010 10:54	Complete	1	3.063	2.5	2.8	3.06	3.2
282	12/8/2010 11:30	Complete	1	2.474	1.953	1.86	1.983	2.382
283	12/8/2010 11:41	Complete	1	2.922	2.422	2.634	2.271	1.973
277	12/8/2010 11:57	Complete	2	2.26	2.335	2.351	2.931	2.611
92	12/8/2010 14:49	Complete	1	2.611	2.642	3.11	3.861	4.132
284	12/8/2010 15:10	DQ12	1					
89	12/9/2010 8:53	DQ2	2					
88	12/9/2010 8:58	Complete	2	2.491	2.232	2.41	2.451	2.424
280	12/9/2010 9:04	Complete	2	2.28	2.6	2.211	2.712	2.2
281	12/9/2010 9:10	DQ2	2					
87	12/9/2010 9:26	Complete	2	2.412	1.98	2.561	2.625	1.79
90	12/9/2010 9:43	DQ2-ETP	2					
282	12/9/2010 10:03	Complete	2	1.622	1.603	1.34	1.603	1.58
92	12/9/2010 10:08	Complete	2	2.503	3.421	3.86	3.924	5.712
91	12/9/2010 10:21	Complete	2	2.51	3.372	2.96	3.274	2.571
279	12/9/2010 11:03	Complete	2	3.644	3.332	2.511	2.562	4.341
283	12/9/2010 11:08	Complete	2	2.432	1.701	2.2	2.307	2.571

Appendix C

Linear Mixed Model Fit By Maximum Likelihood

Formula: ResponseTime ~ (1 | PartID) + Day0First * IsWarmup * Day1ConditionBinary

Data: ask.univariate.NoDQs.wordsOnly

AIC BIC logLik deviance REMLdev

1875 1924 -927.4 1855 1884

Random effects:

Groups Name Variance Std.Dev.

PartID (Intercept) 0.27459 0.52401

Residual 0.27148 0.52104

Number of obs: 1020, groups: PartID, 136

Fixed effects:

	Estimate	Std. Error	t value
(Intercept)	3.17687	0.08685	36.58
Day0First	-0.69987	0.08890	-7.87
IsWarmup	-0.53403	0.07090	-7.53
Day1ConditionBinary	0.10697	0.12732	0.84
Day0First:IsWarmup	0.37831	0.10213	3.70
Day0First:Day1ConditionBinary	-0.13205	0.13228	-1.00
IsWarmup:Day1ConditionBinary	-0.14018	0.10379	-1.35

Day0First:IsWarmup:Day1ConditionBinary	0.39826	0.15168	2.63
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Correlation of Fixed Effects:

	(Intr)	Dy0Frs	IsWrmp	Dy1CnB	Dy0F:IW	D0F:D1	IW:D1C
Day0First	-0.490						
IsWarmup	-0.612	0.598					
Dy1CndtnBnr	-0.682	0.334	0.418				
Dy0Frst:IsW	0.425	-0.862	-0.694	-0.290			
Dy0Frs:D1CB	0.329	-0.672	-0.402	-0.480	0.579		
IsWrmp:D1CB	0.418	-0.409	-0.683	-0.611	0.474	0.588	
D0F:IW:D1CB	-0.286	0.580	0.467	0.418	-0.673	-0.860	-0.684

Appendix D

