

The Impact of Braindump Sites on Item Exposure and Item Parameter Drift

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Abstract

Given the number of so-called “Braindump” sites emerging on the internet, it is necessary to understand their effects on the security and validity of exam scores. This study examines the impact of braindump sites on an exam using two different approaches, one experimental and one non-experimental. Research items were posted verbatim to a popular brain dumpsite immediately upon the exam’s release. A drift analysis compared the item parameter drift of intentionally exposed unscored items to the drift of the live items. There was little difference in the drift in item difficulty between the live and the experimental items. Popular brain-dump sites were searched after the live publication of the exam to identify the rate and quality of the exposure of the exam items. The results found that most of the bank was available after about 8 months and the items were surprisingly accurate. A *p-value* trend analysis was used to explore the relationship between exposure, impact, and parameter drift.

Introduction

The advent of computerized exams and ever increasing access to the World Wide Web has redefined the way items and item banks are maliciously shared. At least three particular types of websites have been problematic for test security. Some “Exam Preparation” sites charge potential candidates a fee to gain access to item banks. Many of these websites are legitimate and provide legitimate practice items. Other illegitimate exam preparation sites attempt to recover the actual live item bank. The second type of website is internet auction sites such as eBay. These websites provide a forum for which people can sell items to potential candidates. Many of these auctions may be selling legitimate practice items. However, personal experience has shown that many of these auctions sell partially recovered live item banks. The third type of website allows candidates to post their own practice item banks and advice regarding exams. These are often referred to as “Braindump” sites. Some of these sites charge an access fee while others provide free access and earn money by advertising. Most advertisers appear to be exam preparation sites that charge fees. Many of these sites warn candidates not to post actual item banks, but there are no real controls in place to prevent this from happening.

A case-in-point of the problems that such websites can cause is the 2002 security breach of a portion of the Graduate Records Exam (GRE) in China. Educational Testing Service responded to the security breach by temporarily discontinuing the computerized version of the Computer Science Test and opting to return to a paper-based administration. (ETS Press Release, 2002).

Information Technology (IT) certification exams may be at greater risk of security breaches due to these websites because the candidates that take these exams are generally very skilled in computers and the use of the internet. This is not to imply that such candidates would be more apt to utilize such sites, only that if they chose to, they would have the knowledge and access. Jones, Smith, Jenson, and Peterson (2004) found “a discernable upward trend in proportion of items drifted as a function of mean exposures per item across (15 IT certification) exams.”

This study investigates the impact that braindump sites can have on the performance of IT certification exams and items. Six research items were posted to a braindump site the day the live version of the exam was released. It is expected that those items would become noticeably easier compared to the live scored items.

Item parameter drift measures the change in item parameters over time (Goldstein, 1983). Drift is different from impact, which measures the difference between the abilities of distinct candidate groups on the same items. The candidates may be grouped based on time. It is possible that one group of candidates has a higher ability than another group. This is particularly important to consider in IT certification because it is often the case that exams are developed in conjunction with the technology and training materials. Therefore, candidate abilities may dramatically increase over time.

In this study, it was expected that the research items would get noticeably easier over time, while controlling for candidate ability. At the same time, it was expected that the probability of success on any item would increase over time. If the probability of success were to increase based on increased awareness of new technology, general exposure, or due to greater availability of training then it would be expected that the probability of success would increase across the entire bank of items. If, on the other hand, the probability of success increases largely due to exposure on a braindump site, then it would be expected that the exposed items would drift further than items that have not been exposed.

Methods

The first part of this study consisted of embedding 6 research items on the live version of a particular IT certification exam. The beta version of the exam consisted of two forms. From these forms, six pre-equated live forms were assembled. Two of the research items were added to each of the six live forms. The scores on these items did not factor into the final score or pass-fail decision of the candidates. A disclaimer was added to the exam that explained that the client often added unscored items to live exams in order to collect information on the performance of those items. The day the live version of the exam was released, all six of the questions were posted to a popular and free braindump site in two separate postings of three items a piece. The items were posted verbatim and with the correct option or options keyed.

An item drift analysis was conducted for all items by using the differential item functioning (DIF) in Winsteps (Linacre, 2003). Winsteps measures drift by calibrating all items and candidates, then calibrating items within candidate groups while holding their ability estimates constant. DIF contrasts are then expressed as

$$d_{i0} \square d_{i1}$$

where d_{i0} is Rasch parameter for item i calculated over group 0 and d_{i1} is the Rasch parameter over group 1. Drift contrasts are tested for significance based on a t-test

$$t_i = \frac{(d_{i0} \square d_{i1})}{\sqrt{s_{e0}^2 + s_{e1}^2}}$$

with df approximated by $n_0 + n_1 - 2$ and $\alpha = .05$. The Rasch-based DIF procedure implemented in Winsteps is based on the same theoretical properties as the Mantel-Haenszel method (Linacre & Wright, 1987).

Item measures calibrated using data from the beta candidates were compared to item measures calibrated using data from the live candidates. Additionally, beta item p -values are plotted against live item p -values.

The second part of this study is an investigation of popular braindump sites to identify the rate and quality of the exposure of the exam items. Braindump sites were located using internet searches and word of mouth from testing candidates. The identified sites were periodically searched for updates. Only free sites were investigated. The results of the study reports approximate item exposure rates and accuracy.

Results

Table 1 shows the results of the drift analysis for the research items. It includes the beta item measure, the live item measure, the contrast between the two, the joint standard error, the Mantel-Haenszel t -statistic, degrees of freedom, and the probability of t if there were no difference between the groups. The same information is provided in the Appendix for the scored items. Figure 1 shows a scatter plot of the beta and live item measures for the scored and experimental items. Figure 2 shows a scatter plot of the beta and live item p -values.

Table 1. Research Item Drift Analysis Results

Item	Beta Measure	Live Measure	Contrast	Joint SE	t	df	$p(t)$
Item 1	0.82	1.25	-0.43	0.21	-2.11	468	0.035
Item 2	-0.67	-0.58	-0.09	0.23	-0.37	608	0.712
Item 3	-0.17	0.62	-0.78	0.16	-4.80	809	0.000
Item 4	-0.02	0.40	-0.43	0.19	-2.28	834	0.023
Item 5	-0.96	-0.96	0.00	0.25	0.00	635	1.000
Item 6	1.57	0.90	0.67	0.21	3.27	594	0.001

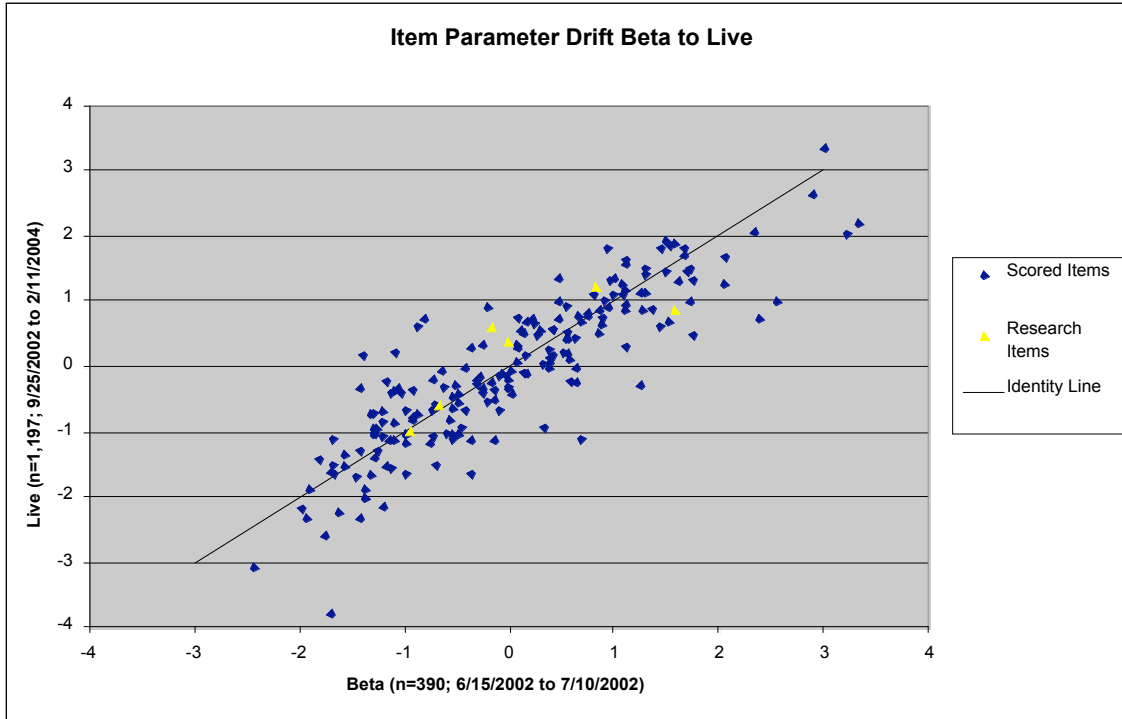


Figure 1. Scatter plot of the beta vs. live item measures.

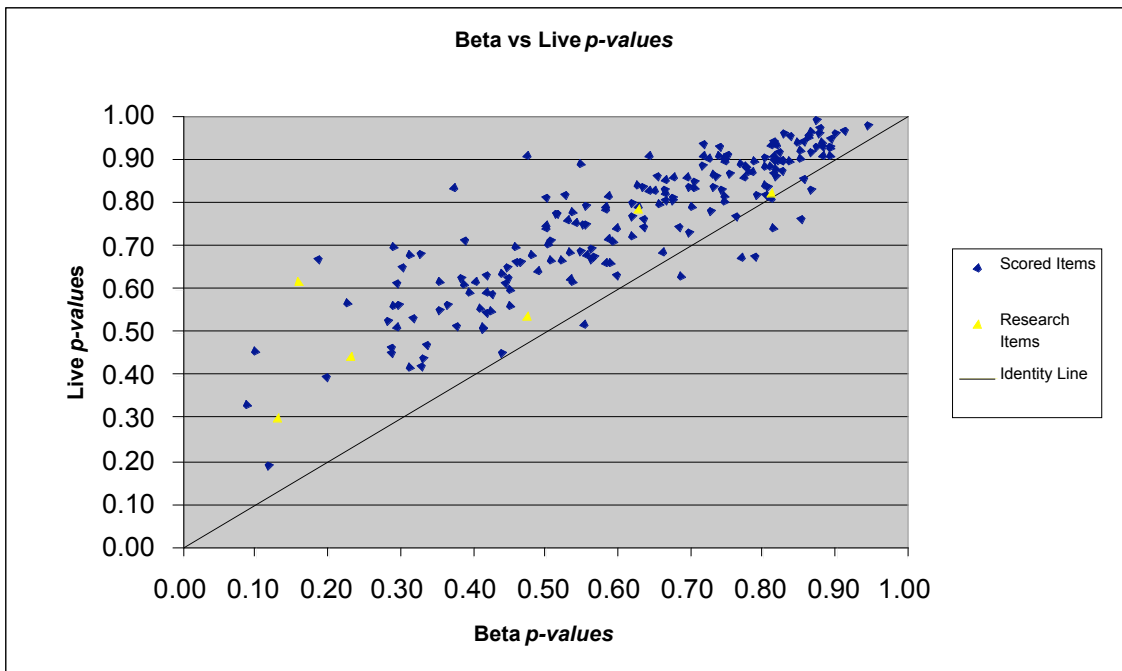


Figure 2. Scatter plot of Beta and Live *p-values*.

An internet search of free braindump sites found about 25 percent of the item bank was exposed within 3 weeks of the exam being published live and with a fair amount of accuracy. After 8 months nearly the entire exam bank, over 200 items, was posted with nearly perfect accuracy including the answer key.

Conclusions

It was expected that there would be significant impact showing candidate abilities increasing from the beta version of the exam to live version. This expectation held true as evidenced in Figure 2. The beta pass rate for this exam was 34.6%, the live pass rate calculated just 10 months after the beta was 65.5%. It was also expected that the item parameter drift for the experimental items would show them becoming easier at a faster rate than the other items. It was initially surprising that this pattern did not hold true. In fact, 3 of the 6 research items appeared significantly more difficult based on the results of the drift analysis while only one appeared easier. Looking at the graphs, the experimental items did not show a distinct pattern any different from the scored items.

The search of braindump sites was limited to those that were free. It did not take into consideration pay sites, auction sites, email list serves, personal communication between potential candidates, or any other means of exposing items in the bank. Still, at least part of the item bank was found to be compromised as early as 3 weeks after the live release and almost entirely exposed, with great accuracy, after 8 months. It is no wonder the results of the drift analysis showed no difference between the research and the scored items. The scored items were being exposed as well!

The results of this analysis are a snap shot a year and half after this exam went live. A major limitation of this study is that item parameter drift is something that happens as a trend over time. Interpreting drift as a snap shot, especially after this long, can make drift difficult to interpret. The mathematical constraints of the calibration convolutes the directionality of parameter drift. In this study, the drift observed in the research items is confounded by item parameter drift in the entire bank to the point that 3 of the research items actually appeared to become more difficult, at least in relation to the other items.

In order to better understand the influence of the item exposures on their difficulties, a *p-value* trend analysis was conducted on the research items. A *p-value* trend analysis plots the *p-value*, or the residual *p-value*, for a window of candidates of a fixed size, in this case 200. For example, the first *y-value* in the trend represents the difference between the *p-value* calculated over candidates 1 through 200 and the average *p-value* across all the items for the same set of candidates. The second *y-value* in the trend represents the difference between the *p-value* for candidates 2 through 201 and the average *p-value* across all items for candidates 2 through 201, et cetera. Figure 3 graphically displays the results of the residual *p-value* trend analysis for the research items during the live version of the exam. The interpretation of the trend within Figure 3 is ambiguous as it only covers a three day period of time. It has been included to show contrast with the live trends. Figure 4 graphically displays the results of the residual *p-value* trend analysis for the research items during the live version of the exam.

It is interesting to see the increase in the item *p-values* between the end of the beta and first 200 live candidates, especially knowing that about 2 months had gone by and at least part of the bank was exposed during that time. The increase is particularly dramatic for Item 4 where its *p-value* tended to be about .45 below the average *p-value* during beta and about .1 to .2 below the average *p-value* during the live administration, even though its Rasch item measure showed it becoming more difficult.

There is a large difference between the average beta *p-value* and the average live *p-value*, even though the trend is relatively flat for both groups. If there is much impact, it would be expected that the average *p-value* would gradually trend upwards. Instead, it jumps greatly between the beta and live versions of the exam then remains relatively flat. The same kind of differences between performance on beta and live exams was observed in 14 other IT certification exams in the Jones et al. study (2004). The outstanding question remains: Is the increase from beta to live a change in the population, perhaps due to increased knowledge, exposure and training, or is the increase due to inappropriate exposure?

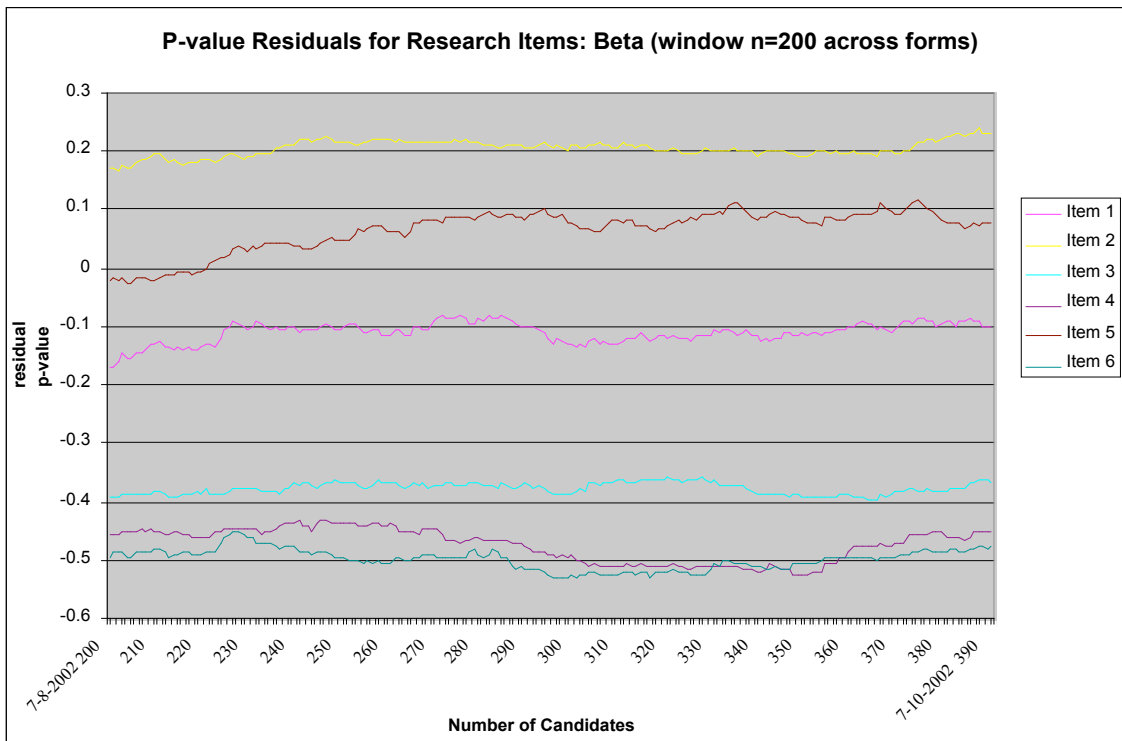


Figure 3. A residual *p-value* trend analysis for the research items in the beta version of the exam.

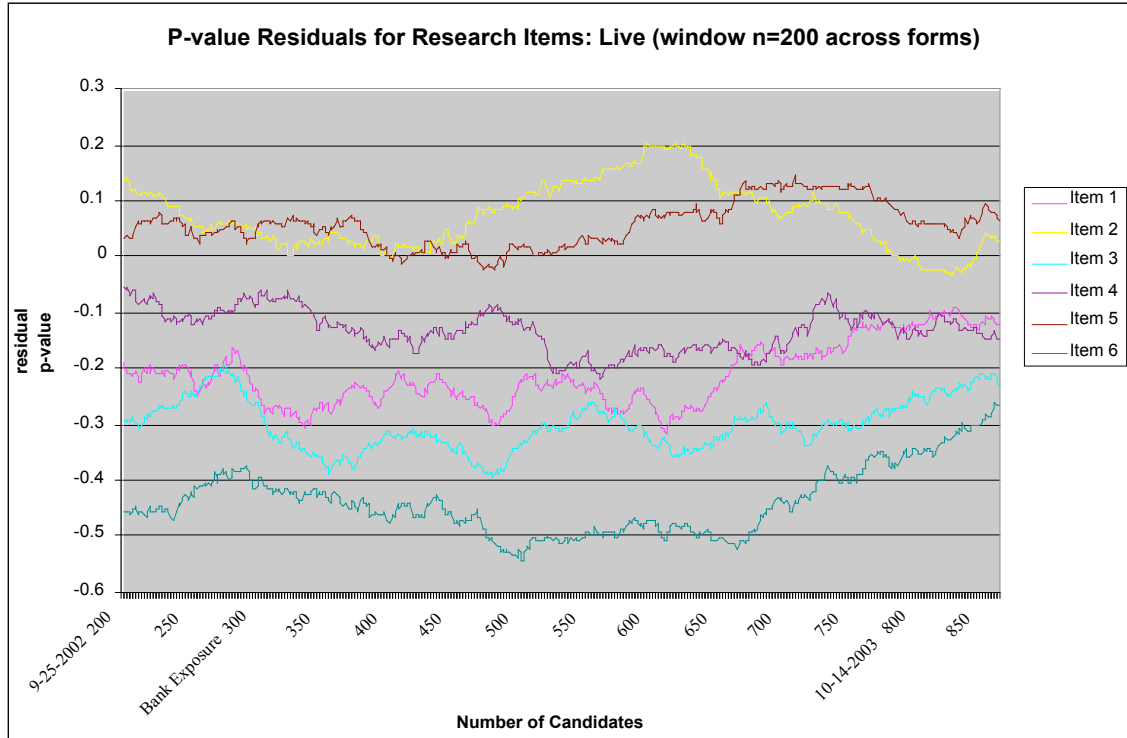


Figure 4. A residual p -value trend analysis for the research items in the live version of the exam.

Given the unfortunate reality of the number of posts and the amount of website traffic, there are likely individual candidates who view these posts, get an unfair advantage, and pass the test when their ability is less than the passing standard. However, this appears to be only a subset of candidates. It is interesting to note that the pass rate stabilized at around 65%. Knowing that nearly the entire bank was exposed with surprising accuracy, this may imply that not all candidates are utilizing the sites. However, the few that do utilize these sites fraudulently jeopardize the validity of the exam and the meaning of the test scores.

This study is not meant to generalize to other testing programs, it would likely not be generalizable at all outside the IT certification realm, and it may not generalize to exams of other sponsors. However, it does show that braindump sites may be having a negative impact on exam programs. Statistical analyses, such as the p -value trend analysis and other similar methods that are presently being developed (see for example Lu and Hambleton, 2003), may prove useful in detecting certain types of fraud. However, we as test developers need to gain a better understanding of the impact of braindump sites and means of dealing with them prior to detecting problems.

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Appendix

This table show the results of the drift analysis for the scored items.

Item	Beta Measure	Live Measure	Contrast	Joint SE	t	df	p(t)
1	-0.49	-0.40	-0.09	0.22	-0.40	606	0.689
2	-0.93	-0.76	-0.17	0.24	-0.69	621	0.490
3	-0.10	-0.13	0.03	0.21	0.14	599	0.889
4	0.67	0.70	-0.02	0.21	-0.12	488	0.905
5	-1.69	-1.09	-0.60	0.40	-1.51	321	0.132
6	0.16	-0.10	0.26	0.20	1.26	636	0.208
7	-0.93	-0.81	-0.12	0.27	-0.43	451	0.667
8	-0.64	-0.30	-0.34	0.19	-1.75	736	0.081
9	-1.33	-0.72	-0.61	0.28	-2.18	488	0.030
10	-1.58	-1.51	-0.07	0.41	-0.16	339	0.873
11	-0.02	-0.32	0.30	0.18	1.61	788	0.108
12	-0.26	0.34	-0.60	0.20	-2.92	623	0.004
13	-1.10	-0.37	-0.73	0.25	-2.97	549	0.003
14	-1.28	-1.01	-0.27	0.30	-0.90	446	0.369
15	0.46	0.75	-0.30	0.20	-1.52	601	0.129
16	0.92	1.82	-0.90	0.16	-5.75	823	0.000
17	0.85	0.87	-0.02	0.19	-0.09	625	0.928
19	-1.18	-0.22	-0.95	0.24	-4.01	602	0.000
20	0.55	0.54	0.01	0.19	0.07	607	0.944
21	3.00	3.36	-0.36	0.22	-1.69	813	0.091
22	-1.40	0.19	-1.59	0.20	-8.07	791	0.000
23	1.29	1.42	-0.13	0.20	-0.66	621	0.509
24	0.46	1.37	-0.91	0.18	-4.98	751	0.000
25	0.23	0.68	-0.45	0.18	-2.44	834	0.015
26	1.24	1.14	0.10	0.19	0.54	688	0.589
27	-1.09	0.23	-1.32	0.17	-7.74	> 1000	0.000
28	-1.38	-2.01	0.63	0.32	2.00	617	0.046
29	-0.89	-0.71	-0.18	0.19	-0.93	906	0.353
30	-0.32	-0.25	-0.07	0.21	-0.34	713	0.734
31	-1.64	-2.23	0.59	0.35	1.67	679	0.095
32	-1.69	-1.50	-0.19	0.35	-0.53	440	0.596
33	-1.10	-0.85	-0.25	0.24	-1.02	690	0.308
34	0.37	0.27	0.10	0.15	0.64	> 1000	0.522
35	-0.55	-1.10	0.55	0.29	1.89	433	0.059
36	-0.61	-1.00	0.39	0.22	1.74	813	0.082
37	-1.70	-1.60	-0.10	0.34	-0.31	454	0.757
38	0.47	1.01	-0.54	0.15	-3.70	964	0.000
39	-1.76	-2.59	0.83	0.48	1.75	448	0.081
40	-0.32	-0.19	-0.13	0.21	-0.61	699	0.542
41	-1.00	-1.04	0.04	0.28	0.14	471	0.889
42	1.75	1.33	0.42	0.20	2.11	692	0.035
43	-1.14	-0.39	-0.75	0.24	-3.14	629	0.002

44	-1.30	-0.70	-0.59	0.26	-2.33	597	0.020
45	0.88	0.77	0.11	0.16	0.73	827	0.466
46	-1.13	-1.55	0.43	0.30	1.42	633	0.156
48	-1.26	-1.27	0.01	0.30	0.05	473	0.960
50	1.26	0.87	0.39	0.19	2.05	680	0.041
51	-0.76	-1.16	0.40	0.29	1.37	448	0.171
52	-1.47	-1.67	0.21	0.35	0.59	435	0.555
53	-1.30	-1.03	-0.27	0.25	-1.06	713	0.290
54	0.53	0.95	-0.42	0.19	-2.22	631	0.027
55	-0.71	-0.57	-0.14	0.23	-0.62	620	0.535
56	-1.98	-2.16	0.18	0.43	0.42	435	0.675
57	-0.52	-0.27	-0.26	0.22	-1.18	682	0.238
58	0.38	0.15	0.23	0.16	1.41	830	0.159
59	-0.37	-1.11	0.73	0.23	3.13	699	0.002
60	-0.29	-0.15	-0.14	0.24	-0.59	412	0.556
61	-0.37	0.30	-0.67	0.24	-2.86	417	0.004
62	-0.65	-0.05	-0.60	0.25	-2.40	415	0.017
63	0.51	0.23	0.27	0.24	1.16	396	0.247
64	-1.70	-3.78	2.07	1.03	2.01	326	0.045
65	-0.92	-0.35	-0.58	0.32	-1.79	308	0.074
66	-0.43	-0.02	-0.41	0.25	-1.67	412	0.096
67	1.66	1.83	-0.17	0.24	-0.74	400	0.460
68	-0.73	-0.19	-0.54	0.26	-2.08	396	0.038
69	-1.00	-0.65	-0.35	0.29	-1.19	407	0.235
70	-0.82	0.75	-1.56	0.25	-6.34	397	0.000
71	0.13	-0.08	0.22	0.25	0.87	402	0.385
72	1.25	-0.27	1.53	0.16	9.47	> 1000	0.000
73	0.11	0.56	-0.46	0.19	-2.41	732	0.016
74	-2.44	-3.06	0.61	0.56	1.10	483	0.272
75	-0.89	0.64	-1.53	0.21	-7.23	699	0.000
76	-1.03	-0.38	-0.65	0.23	-2.81	606	0.005
77	1.72	1.00	0.72	0.20	3.58	613	0.000
78	1.11	0.33	0.78	0.21	3.77	544	0.000
79	0.63	-0.23	0.86	0.17	5.03	827	0.000
80	3.21	2.04	1.17	0.24	4.81	589	0.000
81	1.75	0.50	1.25	0.24	5.18	387	0.000
82	1.60	1.32	0.28	0.23	1.21	399	0.227
83	0.58	-0.22	0.80	0.24	3.26	403	0.001
84	0.33	-0.92	1.25	0.24	5.26	546	0.000
85	-1.38	-1.88	0.50	0.48	1.04	321	0.299
86	-1.22	-1.06	-0.15	0.26	-0.59	639	0.555
87	-0.75	-0.66	-0.09	0.26	-0.33	474	0.742
88	-0.55	-1.04	0.49	0.33	1.46	339	0.145
89	-0.15	-0.34	0.18	0.21	0.85	618	0.396
90	-0.21	-0.53	0.32	0.23	1.37	531	0.171
91	1.08	1.11	-0.03	0.19	-0.13	615	0.897
92	-0.58	-0.80	0.22	0.29	0.75	381	0.454
93	0.16	0.70	-0.55	0.20	-2.77	591	0.006

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94	-0.26	-0.39	0.13	0.22	0.58	620	0.562
95	-0.73	-1.06	0.33	0.28	1.22	470	0.223
96	0.75	0.84	-0.09	0.19	-0.47	627	0.639
97	-1.07	-0.33	-0.74	0.23	-3.26	629	0.001
98	-1.00	-1.16	0.16	0.26	0.61	616	0.542
100	0.08	0.30	-0.22	0.20	-1.10	622	0.272
101	-0.46	-0.91	0.45	0.22	2.05	712	0.041
102	-1.33	-1.65	0.32	0.45	0.70	317	0.484
103	-0.49	-0.55	0.07	0.22	0.29	620	0.772
104	-0.26	-0.33	0.07	0.21	0.32	622	0.749
105	1.11	1.58	-0.46	0.22	-2.11	411	0.035
106	0.14	0.19	-0.05	0.22	-0.23	472	0.818
107	3.32	2.21	1.11	0.34	3.31	338	0.001
108	0.94	0.92	0.02	0.19	0.11	623	0.912
109	0.41	0.58	-0.17	0.17	-1.01	723	0.313
110	0.26	0.49	-0.23	0.19	-1.20	636	0.231
111	0.65	0.79	-0.14	0.23	-0.62	402	0.536
112	0.01	-0.05	0.06	0.18	0.33	778	0.741
113	-0.55	-0.63	0.08	0.19	0.43	809	0.667
114	-0.37	-1.63	1.26	0.39	3.21	339	0.001
115	-1.27	-0.95	-0.32	0.25	-1.28	669	0.201
116	-1.30	-0.94	-0.36	0.27	-1.33	564	0.184
117	-1.58	-1.34	-0.24	0.38	-0.64	336	0.523
118	-1.10	-1.11	0.01	0.29	0.02	470	0.984
119	-1.42	-2.31	0.89	0.56	1.58	308	0.115
120	0.53	0.43	0.10	0.20	0.50	606	0.617
121	-0.15	-1.11	0.96	0.28	3.47	455	0.001
122	0.06	0.08	-0.02	0.20	-0.08	618	0.936
123	1.00	1.36	-0.36	0.21	-1.73	481	0.084
124	0.31	0.06	0.25	0.20	1.24	612	0.215
125	1.72	1.52	0.20	0.22	0.93	491	0.353
126	-1.15	-1.11	-0.04	0.25	-0.16	657	0.873
127	1.43	0.63	0.80	0.19	4.18	821	0.000
128	1.53	1.87	-0.34	0.19	-1.86	930	0.063
129	-1.94	-2.31	0.36	0.40	0.91	578	0.363
130	0.41	0.18	0.23	0.19	1.23	817	0.219
131	1.09	0.87	0.22	0.18	1.21	933	0.227
132	1.48	1.95	-0.47	0.15	-3.15	> 1000	0.002
133	1.51	0.69	0.82	0.19	4.25	823	0.000
134	-1.21	-2.13	0.92	0.31	2.96	758	0.003
135	-1.92	-1.87	-0.05	0.33	-0.14	616	0.889
136	-1.81	-1.41	-0.40	0.25	-1.63	896	0.103
137	-1.67	-1.62	-0.05	0.32	-0.16	645	0.873
138	-1.22	-0.84	-0.38	0.24	-1.57	749	0.117
139	-0.04	-0.13	0.08	0.19	0.42	843	0.675
140	0.55	0.20	0.35	0.19	1.85	734	0.065
141	-0.15	-0.49	0.34	0.20	1.69	820	0.091
142	-0.55	-0.45	-0.10	0.18	-0.58	900	0.562

143	0.13	0.53	-0.40	0.19	-2.03	666	0.043
144	-1.38	-2.00	0.62	0.37	1.67	471	0.096
145	0.80	1.11	-0.31	0.19	-1.66	757	0.097
146	-1.42	-1.28	-0.15	0.32	-0.47	464	0.639
147	-1.28	-1.39	0.11	0.31	0.34	468	0.734
148	-0.02	-0.29	0.27	0.23	1.20	509	0.231
149	-0.18	-0.23	0.05	0.19	0.28	709	0.780
150	1.69	1.47	0.22	0.20	1.08	622	0.281
151	-0.02	-0.18	0.16	0.21	0.76	636	0.448
152	0.08	0.77	-0.69	0.19	-3.57	637	0.000
153	0.06	0.34	-0.28	0.20	-1.39	615	0.165
154	0.75	0.79	-0.04	0.20	-0.20	600	0.842
155	-1.18	-1.51	0.33	0.32	1.02	455	0.308
156	0.90	1.03	-0.13	0.17	-0.78	705	0.436
157	-1.42	-0.33	-1.10	0.29	-3.74	411	0.000
158	1.36	0.90	0.46	0.17	2.65	701	0.008
159	0.28	0.57	-0.28	0.20	-1.45	609	0.148
160	2.05	1.69	0.36	0.19	1.94	679	0.053
161	1.29	1.51	-0.22	0.19	-1.15	635	0.251
163	1.44	1.83	-0.39	0.16	-2.41	802	0.016
164	1.57	1.90	-0.33	0.17	-1.92	740	0.055
165	1.09	1.19	-0.10	0.19	-0.52	606	0.603
166	0.41	0.59	-0.18	0.20	-0.91	544	0.363
167	0.95	1.35	-0.39	0.19	-2.04	615	0.042
168	2.54	1.00	1.55	0.25	6.09	448	0.000
169	0.21	0.75	-0.54	0.14	-3.72	> 1000	0.000
171	0.37	0.00	0.37	0.16	2.28	913	0.023
172	-0.10	-0.65	0.55	0.21	2.66	751	0.008
173	2.04	1.27	0.77	0.21	3.73	826	0.000
174	2.33	2.07	0.26	0.22	1.22	747	0.223
175	0.62	0.46	0.15	0.15	1.00	943	0.318
176	0.38	0.08	0.30	0.19	1.62	826	0.106
177	2.37	0.75	1.62	0.19	8.47	712	0.000
178	1.11	1.64	-0.53	0.19	-2.70	585	0.007
179	-0.08	-0.09	0.02	0.23	0.09	457	0.928
180	1.48	1.47	0.01	0.21	0.05	527	0.960
182	1.06	1.27	-0.20	0.19	-1.06	634	0.290
183	-0.99	-1.03	0.03	0.25	0.14	633	0.889
184	0.02	-0.41	0.42	0.18	2.36	816	0.019
185	-0.21	0.92	-1.12	0.22	-5.22	477	0.000
186	1.66	1.72	-0.06	0.20	-0.31	618	0.757
187	1.29	1.15	0.14	0.17	0.81	724	0.418
188	0.55	0.43	0.12	0.23	0.52	402	0.603
189	0.63	-0.01	0.64	0.21	3.11	555	0.002
190	-0.49	-1.02	0.53	0.31	1.70	393	0.090
191	0.68	-1.09	1.77	0.35	5.04	323	0.000
192	0.98	1.12	-0.14	0.16	-0.88	802	0.379
193	0.84	0.53	0.31	0.16	1.93	819	0.054

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194	-0.43	-0.65	0.22	0.21	1.04	759	0.299
195	2.89	2.64	0.25	0.27	0.93	453	0.353
196	1.10	0.96	0.14	0.15	0.93	952	0.353
198	-1.22	-0.68	-0.53	0.25	-2.16	612	0.031
199	-0.70	-1.49	0.80	0.24	3.27	783	0.001
200	0.57	0.13	0.43	0.16	2.78	940	0.006
201	0.87	0.66	0.21	0.19	1.09	607	0.276
202	-1.00	-1.62	0.63	0.29	2.12	592	0.034
