



April 2009, Vol. 11 Issue 1

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Usability News is a free web newsletter that is produced by the Software Usability Research Laboratory (SURL) at Wichita State University. The SURL team specializes in software/website user interface design, usability testing, and research in human-computer interaction.

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The Personality of Terms and Concepts Used in Online Material

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Summary. This article presents results from a study investigating the personality of terms and concepts used in online content. Participants were asked to rate 120 terms or career names on three factors (Potency, Evaluative, and Activity, based on Osgood, 1957). Potency refers to the strength of the term, Evaluative refers to the goodness or beauty of the term, and Activity refers to the level of activity or speed of the term. Results are quantified by term and by career name. For example, a term that is high on the Potency factor was found to be "power tools", high on the Evaluative factor was "perfume", and high on the Activity factor was a "mountain bike". Interface designers will find these results helpful when trying to insure congruency between online content and user interface design elements and style (i.e., typography, layout aesthetics).

INTRODUCTION

Designers creating online material often are faced with the difficulty of matching the "personality" of their online content to their design (layout, typeface, etc.). Likewise, researchers studying the perceived personality of online material are faced with the difficulty of separating the influence of the online content from the user interface design. Research has shown that the congruency of the design to the content is important in overall user perceptions. For example, Doyle and Bottomley (2004) investigated the role of typeface in product selection and showed that a product with a congruent font (one that was judged to have the same characteristics as the product) was more likely to be chosen for further investigation and for purchase than one that was presented in an incongruent font. They also found that typeface had a powerful effect even with meaningful brand names, which suggests that choosing a typeface could influence profit potential.

In repeated tests of semantic differential scales (SDS), Osgood, Suci, and Tannenbaum (1957) found three factors to explain the meaning of various stimuli; these factors were named Potency, Evaluative, and Activity. The Potency factor indicates the strength or power of items being judged (such as strong/weak). The Evaluative factor measures the assessment of items (such as good/bad, beautiful/ugly). The Activity factor implies the activity level of the items (such as active/passive, fast/slow).

Determining the loadings for particular online content or simple terms and concepts on each factor provides insight to the persona of that information. This can be used in design to ensure congruency in a user interface, such as between a company logo and its corresponding website content.

The purpose of this study was to determine the personality factor loadings of many terms and concepts used in online materials available today. This study was a necessary precursor to other research by the authors to evaluate the personality of typefaces used in a variety of online documents (e.g., resume,

advertisement, website). The website ads and resumes being evaluated needed to be "framed" with content. Thus, the persona of the content first needed to be established.

METHOD

Online content terms were evaluated using semantic differential scales (SDS) to determine loadings on the three factors of Evaluative, Potency, and Activity. The terms were related to those that could be used for an online ad or a resume. For example, an ad for a hammer should have a different persona than an ad for perfume. Similarly, a resume for a florist should have a different persona than a resume for a webmaster.

A survey was conducted to choose the content for the website ads and the onscreen resumes. A list of terms and concepts was obtained through personal communication with J.R. Doyle. Doyle and Bottomley (2006) pre-tested over 100 items on the semantic factors of Potency, Evaluative, and Activity using a clustered anchor approach. The list of terms was rank ordered, and 55 terms representing the high, middle, and low point of each factor were selected for further testing. In addition to being representative of varying points on each factor, terms were selected only if they were exclusive to the factor. The original list was in British-English, so all terms were converted to American-English where necessary. An additional list of 65 career names from the US Department of Labor was added to the terms selected from Doyle and Bottomley list. The final list tested consisted of 120 terms and careers (69 careers and 51 terms).

The list of 120 terms was randomly broken down to 4 sets of 30 terms. The participants were asked to quickly rate each term on three scales (a modified version of the factors suggested by Osgood and associates 1957); they could also skip the item if they did not know its meaning by checking the appropriate box. This methodology (as shown in Figure 1) was recommended by Doyle and Bottomley (2006) as an efficient method to quickly determine semantic qualities of terms.

Theatre	
Hard, Masculine, Rugged, Stiff	○ ○ ○ ○ ○ ○ ○ ○ Soft, Feminine, Delicate, Relaxed
Beautiful, Expensive, Good	○ ○ ○ ○ ○ ○ ○ ○ Ugly, Cheap, Bad
Exciting, Active, Loud, Fast	○ ○ ○ ○ ○ ○ ○ ○ Dull, Passive, Quiet, Slow
<input type="checkbox"/> I do not know what this refers to.	

Figure 1. Example of how the terms were presented (in order of Potency, Evaluative, and Activity factors, respectively).

Participants were recruited through undergraduate psychology classes on the local university campus and spent approximately 10 minutes completing the consent form and survey. A total of 120 participants completed the surveys (N of 30 per set of terms). Data from four participants was eliminated due to incomplete surveys. Ten individual scores were identified across the remaining 116 participants as outliers and were replaced with the mean score (Tabachnick and Fidell, 2001). The career "actuary" was a familiar term to only six participants, and it was removed from further analyses.

RESULTS

Results are listed in Table 2 and 3. Loadings for the three factors and corresponding rank are given for each of the 119 terms evaluated. For example, the term "dancer" had the highest loading for the factor of evaluative, suggesting that it is high on goodness and beauty. The term "fast food" was ranked the lowest on this factor. The highest and lowest ranks for careers are shown in Table 4 and for general terms/concepts in Table 5.

Table 1. Loadings and rankings of the three factors for the CAREERS evaluated.

Term	Score Potency	Score Evaluative	Score Activity	Rank Potency	Rank Evaluative	Rank Activity
accountant	0.889	-0.074	-1.444	46	85	101
actor	0.000	1.955	1.704	72	11	8
agricultural and food scientist	0.615	-0.231	-1.077	55	93	85
architect	0.000	1.483	0.276	71	22	42
artist	-1.370	1.630	0.037	97	18	49
automotive mechanic	2.483	-0.517	0.069	8	102	47
bookkeeping clerk	-1.333	-0.889	-2.259	96	110	118
butcher	2.517	-1.483	-0.310	7	114	59
carpenter	2.568	0.207	0.862	6	76	23
chemist	0.630	0.370	-0.926	54	68	77
childcare worker	-1.444	0.704	0.815	100	50	25
civil engineer	1.500	-0.167	-1.333	29	91	95
coach	1.296	0.037	1.704	34	81	7
computer hardware engineer	1.759	0.517	-0.793	24	60	71
computer software engineer	0.885	0.385	-0.962	47	67	79
computer support specialist	0.885	-0.192	-1.423	47	92	98
cost estimator	0.917	-0.042	-1.458	43	84	103

court reporter	-1.185	0.000	-0.926	90	83	74
dancer	-2.519	2.417	1.593	115	1	10
database administrator	0.731	0.154	-1.192	50	77	91
designer	-1.852	2.370	1.185	105	3	17
desktop publisher	0.143	0.679	-1.286	67	51	93
disc jockey	1.286	0.250	2.250	35	73	2
doctor	0.074	1.926	-0.037	70	12	52
drafter	0.909	-0.091	-0.727	44	86	69
economist	0.667	0.333	-1.185	53	70	90
electrical engineer	1.250	0.517	-0.724	36	61	68
electrician	2.148	0.037	0.259	16	80	44
engineering technician	1.586	0.414	-0.931	27	65	78
environmental scientist	0.731	-0.115	-1.038	50	88	81
farmer	2.103	-0.276	-0.621	18	94	66
financial analyst	0.464	0.143	-1.607	59	78	107
fire fighter	2.765	0.926	2.370	2	40	1
florist	-2.519	2.185	-0.704	115	5	67
hairstylist	-1.931	1.586	0.655	107	20	33

human resources assistant	-0.926	0.556	-0.407	86	55	62
judge	1.759	0.586	-0.310	25	54	58
landscape architect	0.407	1.704	0.185	62	17	45
lawyer	1.379	0.897	1.103	31	41	18
librarian	-1.414	-0.103	-2.448	98	87	119
loan officer	0.556	-0.444	-1.741	56	98	112
musician	-0.552	1.276	0.793	83	30	27
nurse	-1.724	0.897	0.724	102	41	30
paralegal	-0.038	0.538	-0.577	73	56	65
pest control	2.000	-1.778	-1.444	20	117	101
pharmacist	-0.185	1.037	-0.926	77	36	74
photographer	-0.704	1.593	0.185	85	19	45
physicist	1.111	0.778	-0.556	39	48	64
pilot	1.379	1.276	0.897	31	31	22
police officer	2.138	0.143	1.517	17	79	13
politician	1.519	-0.333	0.333	28	95	40
professional athlete	2.172	1.483	2.207	14	23	4
psychologist	-0.185	1.481	-0.111	78	24	56

real estate agent	0.179	0.679	0.929	66	52	21
recreation & fitness worker	0.929	1.393	1.536	41	28	11
recreational therapist	-0.167	0.958	0.375	76	39	37
reporter	0.074	0.259	1.407	69	72	15
secretary	-2.000	0.815	-0.852	109	46	73
social worker	-1.310	0.241	-0.034	95	75	51
statistician	0.926	-0.148	-1.852	42	89	115
surveyor	0.815	-0.519	-1.444	49	103	100
systems analyst	-0.077	0.000	-1.692	75	82	110
teacher	-1.192	0.846	0.346	93	45	39
urban planner	0.273	0.409	0.727	63	66	29
veterinarian	0.250	1.357	0.357	64	29	38
webmaster	0.536	0.250	-1.179	57	73	89
writer	-0.407	0.593	-1.111	82	53	87
zoo keeper	0.889	-0.407	0.963	45	97	20

Table 2. Loadings and ranking of the three factors for the TERMS evaluated.

Term	Score Potency	Score Evaluative	Score Activity	Rank Potency	Rank Evaluative	Rank Activity
aspirin	-0.370	-0.481	-1.222	81	101	92

bank or savings & loan	0.444	0.519	-1.630	61	58	108
bathroom towels	-1.828	1.414	-1.172	104	27	88
book shop	-1.034	0.862	-1.793	88	43	114
boxing gloves	2.207	-0.552	1.690	13	104	9
bricks	2.481	-0.741	-1.704	9	108	111
burglar alarm	1.667	0.444	2.074	26	64	5
cakes	-2.444	2.000	-0.333	114	9	60
car tires	2.069	0.276	0.586	19	71	36
carpet	-0.963	0.741	-1.444	87	49	99
chocolates	-1.793	1.995	0.034	103	10	50
cigarettes	1.138	-2.172	-1.345	38	118	96
computer games	1.370	0.519	1.481	33	58	14
concrete	2.692	-1.500	-1.500	3	115	104
cooking oil	-0.556	-0.556	-0.370	84	106	61
dating agency	-1.069	-0.345	0.828	89	96	24
detergent (bleach)	-0.276	-0.552	-1.069	80	105	83
fabric softener	-2.685	0.778	-1.556	119	47	106
fast food	0.481	-2.407	-0.444	58	119	63

fountain pens	-0.071	0.464	-1.107	74	62	86
garden furniture	-1.185	1.037	-1.333	91	35	94
green house	-1.185	1.222	-1.407	91	32	97
greeting cards	-1.966	1.172	-0.793	108	33	72
hammer	2.571	-1.393	0.643	5	112	34
helmet	1.963	-0.444	1.519	21	98	12
ice cream	-1.429	1.429	0.607	99	25	35
ice rink	-0.250	1.829	0.321	79	14	41
insulation	1.000	-0.840	-2.000	40	109	117
knives (kitchen)	1.926	0.333	0.259	22	69	43
life insurance	0.679	1.000	-1.750	52	38	113
lipstick	-2.655	1.862	-0.103	118	13	55
luggage	0.464	0.536	-1.000	59	57	80
mobile phones	0.103	1.552	1.000	68	21	19
mountain bike	2.407	2.074	2.222	12	7	3
perfume	-2.379	2.414	-0.069	112	2	53
power tools	2.889	0.852	2.074	1	44	5
safe/vault	2.172	1.034	-1.069	14	37	82

semi truck	2.679	-0.679	0.679	4	107	31
shampoo	-1.630	1.111	-0.741	101	34	70
soda/pop drinks	0.235	-0.148	0.741	65	90	28
sofa	-2.380	2.147	-1.963	113	6	116
soft furnishings	-2.103	2.069	-1.536	111	8	105
specialty jams	-2.042	1.417	-0.125	110	26	57
sports watch	1.821	0.464	0.679	23	63	32
storage service	1.480	-1.440	-1.640	30	113	109
theatre	-1.276	1.759	1.207	94	16	16
used cars	1.185	-1.593	-0.926	37	116	76
valentines cards	-2.630	2.259	0.037	117	4	48
whisky	2.481	-0.481	0.815	9	100	26
wine	-1.888	1.759	-0.071	106	15	54
work boots	2.439	-1.000	-1.071	11	111	84

Table 3. Summary of highest and lowest CAREERS by factor

	Potency	Evaluative	Activity
Highest	Fire fighter Carpenter Butcher	Dancer Designer Florist	Fire fighter Disc jockey Pro athlete
Lowest	Florist Dancer Secretary	Pest Control Butcher Bookkeeping clerk	Librarian Bookkeeping clerk Statistician

Table 4. Summary of highest and lowest TERMS by factor

	Potency	Evaluative	Activity
Highest	Power Tools Concrete Hammer	Perfume Valentine card Sofa	Mountain bike Power Tools Burglar alarm
Lowest	Fabric Softener Lipstick Valentine card	Fast Food Cigarettes Used cars	Insulation Sofa Book shop

DISCUSSION

Results of this study are useful because they provide designers with quantitative data for content persona. Practitioners may use this data to choose appropriate content for online documents or ads. If the career content of a resume, for example, is considered evaluative (e.g., designer or dancer), then the design of the resume (e.g., typeface selection) should also be evaluative to provide a non-conflicting overall persona. Consistency between the design and content is important so that the appropriate message is conveyed and the author is perceived in a positive manner.

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