

PROBLEM: Find a graphic in the popular literature (e.g., newspapers, magazines) that portrays quantitative information. Discuss the portrayal of this information in the graphic and captions. Compute the lie factor and estimate the data/ink ratio for the graphic.

SOLUTION: The graphic shown is from *The Onion*, America's Finest News Source (Issue 42, 2006). This graphic addresses homeland security, an issue of great national interest. However, we must ensure its integrity if we are to take action based on the information it portrays.

Superheroes are known to possess at least one weakness each, e.g., Superman and kryptonite. Based on the title, this graphic portrays only the "top superhero weaknesses". Since the percentages add up to 100%, then there must exist a large number of superheroes with the listed top weaknesses (such that a single instance of a top weakness is not portrayed due to "rounding off") or known weaknesses (again, Superman and kryptonite) are in reality not top weaknesses.



Assuming that these top weaknesses are factual, we must address how they are portrayed. Since "Off-putting theremin music" is the most cited top weakness, its length in the graphic is assigned a length of "1" and used as the reference length. The lengths of the other weaknesses and computations required for the lie factor (LF), and the LF itself are tabulated below.

Weakness	Data (%)	Length	Difference with "Off-putting theremin music"		Lie Factor
			Graphic	Data	
Cat dander	13	0.525	-0.500	-0.475	1.05
Public speaking	18	0.663	-0.308	-0.338	0.91
Off-putting theremin music	26	1	0	0	—
Trademarking issues	22	0.788	-0.154	-0.213	0.72
Sand ... mere sand	21	0.675	-0.192	-0.325	0.59

There is a clear agenda in this graphic to deemphasize the danger that sand poses to our superheroes. The influence of the numerous concrete and aggregate political action committees might be suspected as forces behind this graphic. The over-emphasis of cat dander as a top weakness raises suspicions as well. The influence of groups such as the American Kennel Club on this graphic would therefore be worthy of investigative research.

Finally, the issue of how the "ink" in the graphic contributes to what is being conveyed must be addressed. The exploitation of these weaknesses are clear and present dangers to our security, and the graphic does an effective job of placing these threats as ammunition for a weapon of mass destruction pointed directly at our way of life, i.e., our archetypal superhero. The clouds effectively draw the eyes of the viewer down to the plight of our superhero. Therefore, it is concluded that not a drop of ink is wasted; rather, the use of a splash of blue (on the red and white suit) would have clearly shown that our superhero is in fact American.