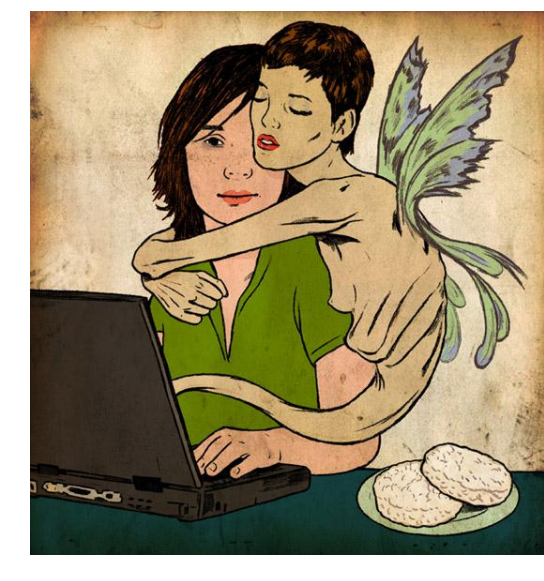


Analysis of Moral Language in Pro-Ana Blogs and Poetry

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From rahgwil.com

Diagram of Typical Pro-Ana Content on Blogs and Sites



From <http://www.anafriends.org/index.asp>

"Thinspiration" photos to inspire losing of weight

Often includes ethereal images of butterflies and angels (Arresting Ana, 2009)



<http://www.d.umn.edu/~jvaleri/dissatisfaction%20in%20bodies.htm>



From anabody.blogspot.com

•spin around and around in circles, it will make you too dizzy and nauseous to eat
•drink water, water, water, before meals, after meals, during meals, when meals won't be happening, all the TIME
•go to a movie with a friend, will keep your mind off of it, keep you away from food, and you can order a diet soda
•Chew sugar-free gum

From <http://www.angelfire.com/crazy/5janeandana/tricks.html>

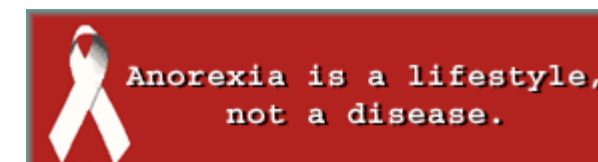
Creeds and commandments are common—generally there can be a religious theme among sites (Borzekowski et al, 2010)

Ana Creed
I believe in control,
the only force mighty
enough to bring order
in the chaos that is my
world...

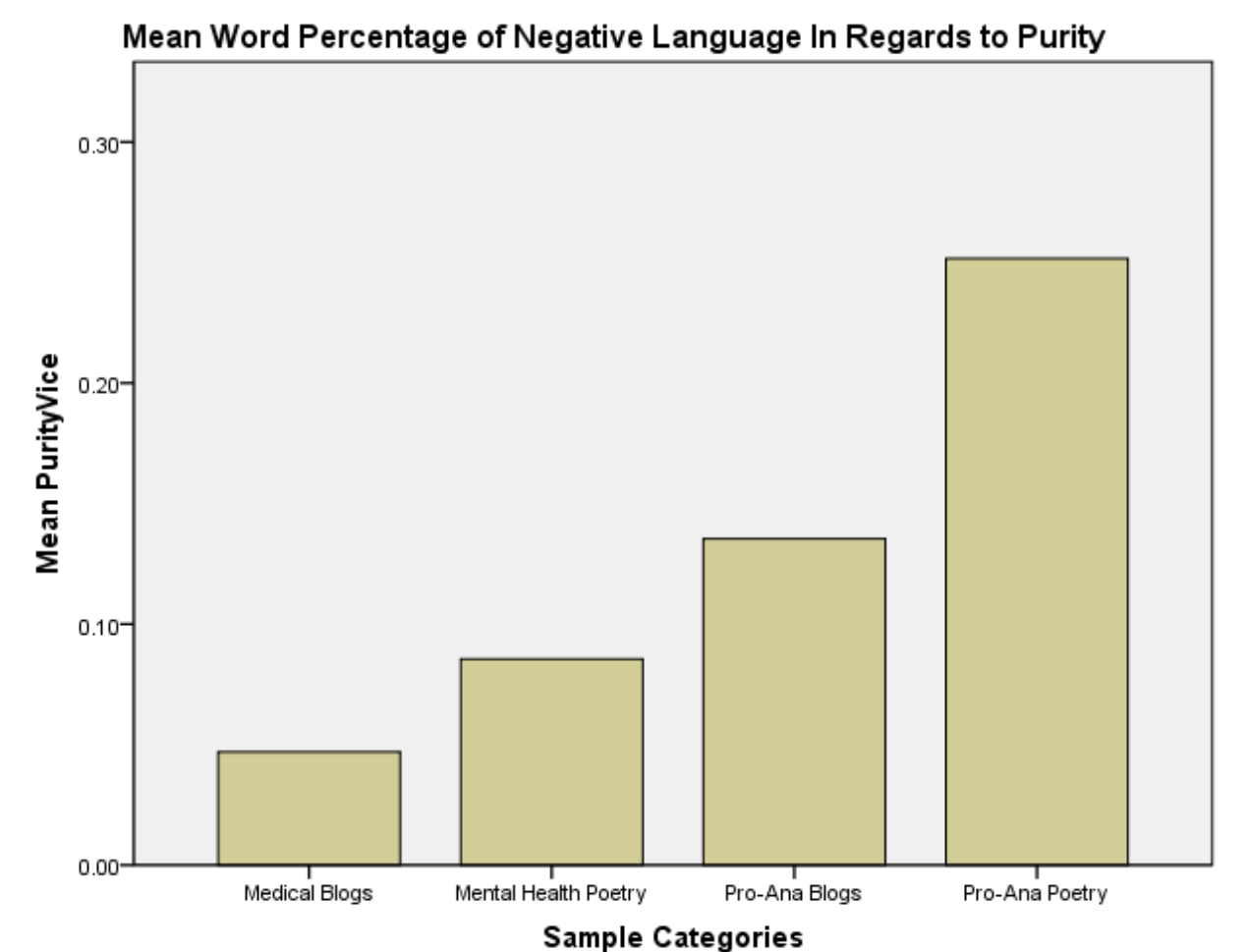
Sites and blogs will often include poetry lamenting certain weights and praising perfection

Twisted Minds
some look at us and call us crazy
how little they really know
they pass us by and stare
like we're in some sickly show
don't they see?
it is not us who is at fault
they kill their bodies with fats and grease
but we give our bodies nothing at all
so, you see,
we really are the purest of the pure
nothing but skin and bones,
plus a scale to reassure
so think about which one of us is on top
next time you stop and stare
for we float in the realm of nonexistence
where all we need is air . . .
—Melissa Cox, with permission
(Borzekowski, Schenk, Wilson & Peebles, 2010)

Tips and Tricks section
Includes weight loss tips ranging from common sense to obscure and strange



<http://proanallifestyle.blogspot.com/2007/07/ana-creed.html>



Results

First, in order to investigate the differences in content between these groups, we conducted series of independent samples t-tests. We determined the type of t-test by using Levene's Test for Equality of Variances, which varied throughout our analyses.

Assuming equal variances, we found that medical blog entries ($M=.25$) had a higher percentage of words regarding harm/vice compared to pro-Ana blog entries ($M=.13$) on average ($t(119)=2.77, p<.01$). We also found that medical blog entries ($M=.25$) had a higher percentage of words regarding authority/virtue than pro-Ana blogs ($M=.15$) on average ($t(68.73)=2.02, p<.01$) when not assuming equal variances.

Medical blog entries ($M=.48$) also had more words pertaining to ingroup/virtue than pro-Ana blog entries ($M=.07$) in general when not assuming equal variances ($t(43.76)=4.62, p<.01$). To ensure that this result was not due to medical blog entries that primarily had to do with the topic of family therapy, we took out those samples. The result was still significant in that medical blog entries ($M=.35$) still consistently had more language pertaining to ingroup/virtue than pro-Ana blogs ($M=.07$) without assuming equal variances ($t(40.52)=4.11, p<.01$). We found as well that medical blog entries ($M=.08$) had more words pertaining to ingroup/vice than pro-Ana blogs entries when not assuming equal variances ($t(43.03)=3.69, p<.01$).

In addition, we also observed that pro-Ana blog entries ($M=.06$) had more words pertaining to purity/virtue than medical blog entries ($M=0$) on average not assuming equal variances ($t(78)=-3.55, p<.01$). We also removed any outliers which may have been unrepresentative of the sample. We still found significant results in that pro-Ana blog entries ($M=.04$) had more words regarding purity/virtue than the medical blogs when not assuming equal variances ($M=0$) ($t(76)=-4.29, p<.01$). We also found that pro-Ana blog entries ($M=.14$) included more language in regards to purity/vice than medical blog entries ($M=.05$) in general when not assuming equal variances ($t(118.77)=-3.03, p<.01$).

We found that pro-Ana poetry ($M=.07$) had more words pertaining to fairness/virtue than medical blog entries ($M=.01$) when not assuming equal variances ($t(52.05)=-2.41, p=.02$). We also found that pro-Ana poetry ($M=.25$) included more words regarding purity/vice than medical blogs ($M=.09$) on average when not assuming equal variances ($t(65.31)=-2.80, p<.01$).

In addition, we observed that authors of pro-Ana poetry ($M=.34$) included more words pertaining to harm/vice than pro-Ana blogs ($M=.14$) on average when assuming equal variances ($t(114)=-2.52, p<.01$).

Introduction

Anorexia nervosa is one of the most difficult mental illnesses for therapists treat with its high recidivism rate over 50% and its high mortality rate of 20 percent (Brynolf, 2009, p.101). It is estimated that around 2-5% of adolescents in the western world have anorexia nervosa, and that 90% of them are young women (Griffin & Berry, 2003, p.43). Unfortunately, technology of the twenty-first century has brought new challenges for therapists in counseling anorexic individuals. One problem is the emergence of pro-Ana or pro-Anorexia nervosa web communities. These communities can be found on blogs or websites which entail poetry, pictures of thin individuals (thinspiration), and a tips and tricks section on how to lose weight.

These sites emphasize and advertise grotesquely thin appearances. They advocate for intense practices to lose weight and often include methods of starvation, vomiting, laxatives, excessive exercise. Unlike pro-Mia (or pro-Bulimia nervosa websites), pro-Ana sites usually focus on fasting techniques (Giles, 2006). Although there have not been many studies on pro-Ana sites or blogs, the few studies have suggested that viewership of sites correlates with higher body dissatisfaction, eating disturbances (Harper, Sperry & Thompson, 2008), increased perfectionism (Custers & Bulck, 2009), and lower self-esteem (Bardone-Cone & Cass, 2006).

Goals and Expectations

The goal of our research was to see if authors of pro-Ana blogs and poetry used more language referencing sacredness (disgust), authority, or in-group loyalty. We wondered if persons with anorexia nervosa may value some of Graham, Haidt & Nosek's (2009) moral categories over others. For instance, we are curious if persons on pro-Ana websites used more words referring to sacredness (e.g. *cleanliness, purity, disgust*) than medical professionals when discussing anorexia nervosa. There has been recent literature which suggests that eating disorders correlate with feelings of disgust (Troop & Baker, 2009). We have taken text from blogs and poetry associated with the movement and are in the process analyzing the samples by employing Graham, Haidt, and Nosek's (2009) moral foundations dictionary and word count.

Procedure

Sampling Procedure

Our research is an unobtrusive, naturalistic observation in public spaces.

There are four sample groups:

- pro-Ana blog entries
- medical blog entries pertaining to eating disorders
- pro-Ana poetry
- mental health poetry

Pro-Ana Blog Entry Sampling

Search "pro-ana blog" under Google, Yahoo, Bing

Look at first 10 pages of results (1st generation)

Copy entries and obtain 500 words of text

Take linked pro-ana blogs for sample (2nd generation)

Exclude blogs that do not fit under our definition of pro-Ana, have a theme outside of AN,

entries do not add up to 500 words or more

Record date, time of search, search results, whether it's first or second generation, author/user

Medical Blog Entry Sampling

- Searched "eating disorder medical blog" on the 3 search engines
- Took entries pertaining to EDs in general—not entries specifically pertaining to bulimia nervosa, compulsive overeating, binge disorder, rare EDs (e.g. Pica disorder)
- Entries combined had to be at least 500 words
- Had to be from medical experts, authors of published ED books, journalists from well-known newspapers, universities, clinics
- Medical personnel=MD, RD, Ph.D , RD, MS, MA, LMSW, DMSW, MD, LP, LMFT, PsyD.
- Took first 10 pages with 1st and 2nd generation sites

Pro-Ana Poetry Sampling

- Searched "pro-Ana poetry"
- Took first 300 words of poetry from pro-Ana sites
- Whatever the author deems as poetry is poetry
- Excluded poem if it came up again under different website
- Took first 10 pages with 1st and then 2nd generation sites
- Had to become a member on some sites to see poetry (checked with IRB)

Mental Health Poetry Sampling

- Searched "mental health poetry"
- Poems that fell under poetry labeled "mental health poetry" or author labeled as mental health poetry went in sample
- Excluded the same poem from same author on different sites, but different poems on different sites were included
- Excluded rated poetry
- Took first 300 words from poems, took first 10 pages 1st and 2nd generation

We then ran the samples under the LIWC program and obtained word percentages of language pertaining to Graham and colleague's five moral dimensions. The five moral dimensions of purity, authority, harm/care, ingroup loyalty, and fairness each have two descriptive categories that indicate negative language surrounding the moral dimension (vice), and positive language (virtue). For instance, for the category of purity/vice, the language refers to descriptors of moral failings within purity (e.g. *disgust*, deprav*, disease*, and unclean**).



From <http://imgfave.com/search/thinspiration>



From spildays.blogspot.com

Discussion

Overall, we found several significant differences between the pro-Ana groups and their controls. In particular, we saw a trend that pro-Ana authors were more likely to use more language referring to purity/vice. We believe this may have to do with the fact that victims who suffer from anorexia nervosa are more likely to have feelings of disgust in regards to food and their own self-concept. Troop & Baker (2009) have noted that when significant correlations are found between disgust and eating disorder symptoms, there are correlations after taking out effects of depression, anxiety, fear, and neuroticism (p. 236). It is also interesting that Murray and colleagues (2008) found no difference between patients with and without eating disorders in regards to recognizing facial displays of emotions, but patients with eating disorders were more sensitive to recognition of disgust in facial expressions (as cited in Troop & Baker, 2009, p. 242). Perhaps, persons struggling with anorexia nervosa are more likely to focus upon the consequences of not being pure. However, that being said, we find it interesting that the pro-Ana blog entries were more likely to refer to purity with positive language than the medical blogs. This result could be due to the fact that pro-Ana bloggers care about purity more than the medical bloggers. Giles (2006) noted that many pro-Ana users in his study spoke of "ana" being a practice of purity, and saw anorexics as having a higher moral ground due to their self-discipline from dieting (p.468). Nevertheless, the pro-Ana bloggers' mean percentage of words pertaining to purity/virtue was extremely small ($M=.03$), and it is possible that this significant result happened due to not having enough samples of medical blogs.

Some other of our significant results also had very small means, which also makes us wary of drawing conclusions from the different sample groups. For instance, medical blog entries had a mean percentage of .09 for language pertaining to ingroup/vice, while pro-Ana blog entries had a mean of .01. It is possible that some words pertaining to ingroup/vice such as *individual* may have come up a couple of times for the medical blogs, but only once or twice for the pro-Ana blog entries. While the medical blog entries may have used *individual* more than the pro-Ana groups, that might not necessarily mean that they valued ingroup loyalty more than the pro-Ana users. Hopefully, future studies will verify whether our results were legitimate.

The main limitation of our study is that the pro-Ana blog and poetry samples could be from the same user and or users with a different alias. It is possible we are not getting an accurate representative sampling of the pro-Ana community. Moreover, the 500 or 300 words with which we have taken from each blog and poetry page may not be an accurate representation of blogs have thousands of words and the most recent entries or poems may simply be anomalies from the rest of the text. In the future, we hope we can take pro-Ana poetry and blog entries in their entirety and use them as samples which would be more likely to be representative of the pro-Ana population.

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