

# インターネット上の道徳に対する性別と個人的関係の影響

## Influence of sex and personal relationships on the ethics on the Internet

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**Abstract** What are the factors that influence our moral behaviors on the Internet and our consciousness on such behaviors? This presentation discusses influences of sex and personal relationships, and their interaction. We use the result of an international online survey conducted in 2002, and we focus on the U.S. data.

### 1. Introduction

What factors influence our morality? More specifically, what factors influence our morality on the Internet? In this study, we present empirical evidence of the influence of gender and personal ties on our moral behaviors and our moral consciousness while interacting on the Internet based on the results of a survey.

Ever since Gilligan's proposal of care ethics, there has been an ongoing discussion of the nature of such ethics, and there are serious differences in opinion even among feminists (Gilligan). One of the primary issues is whether women have a different way of approaching moral questions than men. If they do, we expect to find differences in the patterns of their replies to moral questions.

Our interest in the impact of personal ties is related to the question of "why should one be moral?". Why do we and why should we behave morally, even when it is against our self-interest? This is a tough question if we assume all individuals pursue rational self-interest. As a result, recent investigations into this question emphasize the role of emotions and personal ties (such as the emphasis on a community bond in communitarian ethics). This issue of personal ties is related to feminist ethics, and so we address these issues together in this paper. The difference between mainstream ethics and feminist ethics is often described as the difference between universalistic ethics and particularist ethics, and the feminist version of particularist ethics is supposed to be based on strong personal ties (Meyers). In fact, Anita Superson has already suggested that feminist ethics can overcome "why be moral?" skeptics in this manner, although she warns against the risks inherent in such a strategy (Superson).

In this paper, we use the phrase "Information Ethics" (with both a capital I and a capital E) to refer to people's moral behavior and moral awareness on the Internet. An operational definition will be given later. Those behaviors and awareness encountered in everyday life are called "Everyday Ethics." Using these terms, we can recast the

empirical hypotheses implied by the above philosophical positions as follows:

1. Gender influences both Information Ethics and Everyday Ethics.
2. The more personal ties people have on the Internet, the more ethical people are concerning Information Ethics.
3. The influence of personal ties on Information Ethics is correlated to gender.

We did not find any previous empirical study concerning the second and third hypotheses. By contrast, there are previous studies related to the first hypothesis concerning gender influencing moral decision-making in computer ethics (Khazanchi; Mason and Mudrack; McDonald and Pak; Kreie and Cronan). However, none of the studies used a randomized sample. Respondents were taken from university students and/or business associations. As a result, Adam and Ofori-Amanfo criticize these studies for potentially relying on samples that do not represent the overall population (Adam and Ofori-Amanfo). In fact, they are skeptical about the very use of questionnaires to study moral decision-making. As they point out, "researchers can never be sure if people will respond to a live situation in the same way as they have detailed in the questionnaire" (p.43). This is a problem with any types of questionnaire, but Adam and Ofori-Amanfo think moral questions are particularly problematic in this regard, because of the systematic effect of weakness of will. As a result, they urge researchers investigating moral decision-making to use an in-depth interview method, rather than a questionnaire. Their points are well taken, but we think our own study overcomes these criticisms, as explained below.

### 2. Method

The survey on which this paper is based was conducted by the Foundations of Information Ethics (FINE) Project, a five-year project on information ethics funded by the Japanese government from 1998 to 2003. The survey itself

asked questions on factors that may influence morality (including nationality; moral awareness and behavior in everyday life; the content, frequency, form of Internet use; Internet literacy; recognition of salient features of the Internet; personality and so on), along with some questions related to Everyday and Information Ethics. However, in this paper, we concentrate on factors related to gender and personal ties.

Even though the survey was conducted in three countries, we concentrate on results from the United States in this paper. The subjects of the survey were male and female Internet users in the United States, 20 to 39 years old and from all parts of the country. Respondents were picked randomly from a panel compiled by a survey company, Greenfield Online. The panel is designed so that a random sample from the panel is representative of the real population of Internet users of ages 20 to 39. The survey was conducted from February 21 to March 7, 2002. Subjects logged on to a questionnaire website with a log-in-name and password. The sample size was 580 (producing 505 usable samples). Among the respondents, 50.1% were male, 49.9% were female. 39.2% of the respondents were between 20 and 29 years old, while 60.8% were between 30 and 39 years old.

### 3. Results

#### (1) Construction of the main variables

First, let us explain how we indexed the main variables for analysis. We asked the respondents to rate their behavior and awareness in both Information and Everyday Ethics by listing various items related to ethical behavior. Thus, we have four categories of things to be explained, namely: behavior in Information Ethics, moral awareness in Information Ethics, behavior in Everyday Ethics, and moral awareness in Everyday Ethics. For example, the questions used to identify behavior in Information Ethics are the following:

Q. How often have you done the following on the Internet? Please circle the most suitable number for each item.

1 very often    2 often    3 sometimes    4 rarely    5 never

- a. Circulated incorrect information knowingly
- b. Read other people's e-mail without their knowledge
- c. Looked at pornographic web sites on computers in your workplace or at school
- d. Gave your password to other person/s
- e. Accessed computers that you were not authorized to access
- f. Tampered with data on other person's computer through the Internet
- g. Sent a computer virus deliberately
- h. Circulated somebody's name and phone number to a large number of unidentified people without his/her knowledge

- i. Used pictures or texts from somebody's web site for your own web site without his/her knowledge (exclude cases in which permission was obtained)
- j. Put pornographic pictures or texts on your freely-accessible web site

A series of factor analyses further divides the items in each category into two groups. The first group consists of "other-regarding" acts that have direct influence on others, such as tampering with data on another person's computer through the Internet and deliberately sending a computer virus (f,g,h,j). The second group consists of "self-regarding" acts that do not directly target other people, such as reading other people's e-mail without their knowledge and looking at pornographic websites on computers that you are not authorized to access (a, b, e, i). All four categories are divided into the two groups, resulting in eight variables:

- BOI: behavior in other-regarding Information Ethics
- BSI: behavior in self-regarding Information Ethics
- AOI: awareness in other-regarding Information Ethics
- ASI: awareness in self-regarding Information Ethics
- BOE: behavior in other-regarding Everyday Ethics
- BSE: behavior in self-regarding Everyday Ethics
- AOE: awareness in other-regarding Everyday Ethics
- ASE: awareness in self-regarding Everyday Ethics

We refer to these eight variables as the "main variables" throughout in this paper.

#### (2) Gender differences

Now that we have defined the main variables, let us look at the effect of other variables. First, let us examine the influence of gender on the main variables. We couldn't find a statistically significant difference for BOI, but for the other seven factors across four categories, there is a statistically significant difference between men and women, and the direction of difference is always such that women's answers are higher on a scale of moral desirability than men's answers. In other words, women exhibit 'morally desirable' behavior both in everyday life and on the Internet more than men, and their moral awareness is also greater than that of men.

What causes the difference? As our survey asked personality questions of our respondents, we have some data. We asked questions that measure such personality factors as rational tendency, egoistic tendency, sympathetic tendency and conscientious tendency. First we examine how the rational, egoistic and sympathetic tendencies are related to both gender and the main variables. (1) Then we consider the conscientious tendency. Finally, the interrelationship among these tendencies, gender and the main variables is considered.

Regarding the rational, egoistic and sympathetic tendencies, how are these tendencies related to gender? As

is shown in the following table, there are statistically significant differences between men and women in terms of these tendencies (Table 1).

		mean	t value	d.f.	sig.
empathetic tendency	female	13.95	3.45	503	***
	male	13.21			
egoistic tendency	female	8.05	-3.453	503	***
	male	8.88			
rationalistic tendency	female	14.36	2.118	483.346	*
	male	13.92			

\*\*\* p<0.001 \* p<0.5

Table 1 The relationship between gender and empathic tendency, egoistic tendency and rationalistic tendency (t-test).

Women tend to score higher in sympathy and rationality (i.e., more sympathetic and rational), while men tend to score higher in egoism (i.e., more egoistic). How are these three tendencies related to the main variables (BOI, BSI and so on)? We analyzed the correlations between and statistical significance of these tendencies and the main variables. Some of the results are summarized in the next table. In general, the egoistic tendency has a strong negative effect on behavioral variables (BOI, BSI, BOE and BSE), while sympathetic and rational tendencies have positive effects on awareness variables (AOI, ASI, AOE and ASE) and behavior variables in everyday life (BOE and BSE), although the egoistic tendency has much stronger effect (Table2).

	empathetic tendency	egoistic tendency	rationalistic tendency
BOI	-0.033ns	-0.225***	-0.004ns
BSI	0.069ns	-0.194***	0.061ns
AOI	0.220***	-0.051ns	0.182***
ASI	0.211***	-0.045ns	0.205***
BOE	0.131***	-0.337***	0.094*
BSE	0.150***	-0.299***	0.164***
AOE	0.306***	-0.106*	0.291***
ASE	0.279***	-0.092*	0.270***

\*\*\* p<0.001 \*\* p<.01 \* p<.05

Table2 The relationship between personality (empathic tendency, egoistic tendency and rationalistic tendency) and BOI, BSI, AOI, ASI, BOE, BSE, AOE and ASE (correlation coefficients).

Is the gender difference caused by a 'womanly' attitude of caring or sympathy not shared by men, a result of the repression of women, or something else entirely? If the apparent gender difference is caused by personality factors, then difference in the main variables should disappear when we compare men and women of similar personality. Such a

control can be performed using a multiple regression analysis. Some of the results are summarized in Table 3.

Using a multiple regression analysis involving the egoistic tendency and gender, the effect of gender disappears for BSE. In the case of BOE and BSI, the gender effect does not disappear even when we subtract the influence of egoistic tendency, but the effect is significantly lessened. As for the rational and sympathetic tendencies, the effects of gender on awareness variables (AOI, ASI, AOE and ASE) are lessened by these factors, but significant gender differences remain even after the effect of these personality factors are subtracted.

These results suggest that the gender difference in moral behavior can partly be explained by the gender difference in the egoistic tendency. Speaking plainly, women tend to behave morally because they are less egoistic than men. A large part of the gender difference in moral awareness can be also explained by the gender difference in the sympathetic and rational tendencies, but there are residual gender differences that cannot be explained by these personality factors.

### (3) Personal Ties

The next category of independent variables to be analyzed is the category of variables related to personal ties. We asked several questions to examine such ties. The first question in this category was, "How many friends do you have with whom you became acquainted through the Internet?" The respondents provided a number, but for our purposes we group the answers into six categories: zero, 1 to 2, 3 to 4, 5 to10, 11 to 20, and more than 20. Let us call this variable NOF ("number of friends"). The second question was, "How often do the following things happen when you interact with others on the Internet? (a)They tell you about themselves. (b) They tell you about their personal troubles. (c)You tell them about yourself. (d) You tell them about your personal troubles." The respondents were asked to choose "very often," "often," "sometimes," "rarely" or "never." Let us call these variables Intimacy (a), (b), (c) and (d). Let us use "relationship variables" as the generic name for these variables. How do these variables influence moral awareness and behavior, especially on the Internet?

First, let us look at the results of simple, one-way ANOVA, assuming the relationship variables are independent variables and the Internet-related main variables (BSI, BOI, ASI and AOI) are dependent variables. The results for NOF are statistically significant in terms of BOI and BSI (p<0.001 for both variables). Put another way, the groups, sorted by number of friends, have significantly different scores in BOI and BSI. Intimacy (a) through (d) have similar effects. None of these five variables have a significant effect on AOI or ASI, meaning that these factors change people's behavior on the Internet without changing people's opinion on such behaviors.

	$\beta$ coefficient (standardized regression coefficient)							
	BOI	BSI	AOI	ASI	BOE	BSE	AOE	ASE
gender	0.017	0.159***	0.186***	0.162***	0.095*	0.043	0.151***	0.165***
empathetic tendency	-0.108	-0.012	0.147*	0.110	0.036	0.006	0.167**	0.144*
egoistic tendency	-0.236***	-0.170***	0.001	-0.002	-0.316***	-0.288***	-0.055	-0.042
rationalistic tendency	0.058	0.050	0.079	0.118*	0.054	0.148**	0.167**	0.160*
R2	0.057***	0.065***	0.085***	0.078***	0.130***	0.115***	0.136***	0.122***

Table 3 The effects of gender and personality on BOI, BSI, AOI, ASI, BOE, BSE, AOE and ASE (multiple regression).

			sum of squares	d.f.	mean square	F value	sig.	$\beta$ coefficient
BOI	covariates	frequency of use	78.941	1	78.941	46.324	***	
	main effects	NOF	28.443	5	5.688	3.338	**	0.174
		gender	0.014	1	0.014	0.008	ns	0.004
BSI	covariates	frequency of use	217.190	1	217.190	68.032	***	
	main effects	NOF	63.113	5	12.622	3.953	**	0.183
		gender	44.329	1	44.329	13.885	***	0.156

\*\*\* p<.001 \*\* p<.01 \* p<.05

Table 4 The effects of NOF and gender on BOI and BSI (MCA with the use-frequency index as the control variable).

			sum of squares	d.f.	mean square	F value	sig.	$\beta$ coefficient
BOI	covariates	frequency of use	78.941	1	78.941	45.725	***	
	main effects	Intimacy(a)	15.632	4	3.908	2.263	ns	0.129
		gender	0.360	1	0.360	0.208	ns	0.020
BSI	covariates	frequency of use	217.190	1	217.190	66.743	***	
	main effects	Intimacy(a)	29.226	4	7.306	2.245	ns	0.127
		gender	43.798	1	43.798	13.459	***	0.155

\*\*\* p<.001 \*\* p<.01 \* p<.05

Table 5 The effects of Intimacy (a) and gender on BOI and BSI (MCA with the use-frequency index as the control variable).

			sum of squares	d.f.	mean square	F value	sig.	$\beta$ coefficient
BOI	covariates	frequency of use	78.941	1	78.941	46.325	***	
	main effects	Intimacy(b)	26.760	4	6.690	3.926	**	0.170
		gender	0.611	1	0.611	0.358	ns	0.026
BSI	covariates	frequency of use	217.190	1	217.190	68.042	***	
	main effects	Intimacy(b)	60.169	4	15.042	4.712	***	0.184
		gender	49.207	1	49.207	15.415	***	0.165

\*\*\* p<.001 \*\* p<.01 \* p<.05

Table6 The effects of Intimacy (b) and gender on BOI and BSI (MCA with the use-frequency index as the control variable).

So far, our second hypothesis seems to be confirmed. However, the direction of the difference caused by the relationship variables is such that the more friends people have on the Internet, or the more intimate ties people have on the Internet, the lower the behavioral scores are, i.e., the less morally desirable their behaviors become. This effect is the opposite of our expectations. We expected that the thicker the web of personal ties, the more reason people have to behave morally. This expectation turned out to be wrong.

There is a plausible explanation for this puzzling result. Those who have more friends or intimate ties on the Internet are those who spend more time on the Internet, and such people have more opportunities to exhibit immoral behavior on the Internet. In other words, the correlation between the relationship variables and behaviors on the Internet is a spurious one, because both are correlated with use frequency.

If this explanation is correct, then the spurious correlation should disappear if we control for Internet use frequency. We expected such outcomes, so our survey asked respondents about their quantity of Internet usage such as e-mail, web browsing, chatting and so forth. Based on responses to these questions, we constructed an index of use frequency, although we do not have enough space to go into details concerning the indexing formula. The results for NOF, Intimacy (a) and Intimacy (b), prepared using multiple classification analysis (MCA) with the use-frequency index as the control variable, are shown in Tables 4 through 6. For comparative reasons, the effects of gender (similarly controlled by the use-frequency index) are also shown. In general, the negative effect of the relationship variables on behavioral variables remains even after controlling for use frequency. (2) The size of the impact of Intimacy (b) through (d) is larger than the impact of gender even after subtracting the use-frequency effect.

Another plausible explanation is that the correlation in question is caused by some factor external to the Internet (ex. personality). If this is true, the relationship variables should have a similar effect on everyday ethics. To check this prediction, we conducted ANOVA, using the relationship variables as independent variables and BOE, BSE, AOE and ASE as dependent variables. The results were strikingly similar to the analysis of BOI, BSI, AOI and ASI. All the relationship variables had highly significant effects on the behavioral variables, while the relationship variables did not significantly impact the awareness variables. The differences were such that the more friends and intimate ties a person had, the worse that person behaved. That we observe the same pattern in Everyday Ethics suggests that the explanation of this puzzling effect should be sought outside of the Internet.

Can the missing factor be gender, as discussed in the previous section? To take this possibility into account, we analyzed the gender differences in the relationship variables.

We conducted chi-square analyses and found statistically significant gender differences in all five relationship variables. The pattern of differences is such that women more often than men tend to choose extreme answers ('none' and 'more than 20' for NOF, 'very often' and 'never' for Intimacy (a) through (d)). However, because the correlation between the relationship variables and main behavioral variables is linear (i.e., the higher these factors, the lower the scores in main behavioral variables), it is unlikely that gender, whose effect on the relationship variables is non linear, is the missing factor that solves this puzzle.

#### 4. Discussion

So far, we have reported the results of our analysis of the survey data. How should we interpret these results? Can we take these results at face value? Let us examine the implications of this analysis.

Are there really gender differences in the moral sphere? For 20 to 39 year old Internet users in the United States, the answer is yes. Part of the gender differences can be explained by personality differences between genders, but gender differences in moral awareness remain even after controlling for personality factors. The results support a Gilligan-like interpretation of the gender difference, although the result is more complicated than Gilligan expected. However, this is not the only possible explanation. A Marxist feminist would argue that the repression and history of exploitation of women has made them less egoistic. One might also argue that female Internet users are not representative of typical women. Our survey does not address these questions.

Does gender have a different effect on moral awareness and behavior when interacting through the Internet? Because we could not find gender differences when examining BOI, but there are differences when examining BOE, there is evidence that gender has a differential effect on interactions on the Internet and in everyday life. However, the situation is not that simple. Although many factors discussed here do not seem to impact BOI, it is dangerous to conclude that these factors are irrelevant to this kind of behavior. The behaviors contained in this category are extreme (such as knowingly sending a computer virus), and few people have the opportunity to do such things. In such a case, the difference in replies tends to be small, and the sample size required to identify real differences is huge. The accidental nature of BOI behaviors also explains why the magnitude of the impact of variables (magnitude of impact should not be confused with the statistical significance) on BOI is not as large as the impact on BSI. Thus, our assertions concerning the peculiarity of BOI behaviors are tentative.

Can we conclude that having more friends or intimate ties on the Internet has a morally undesirable effect? As we have seen, these factors are correlated to behaviors in

Everyday Ethics, but it is unlikely that these Internet-related variables directly influence our behavior in everyday life. We could not identify the reason for the correlation, but friendliness or an outgoing personality might be the common cause of both the undesirable behaviors and high values in the relationship variables. (3) Even so, we have a paradoxical situation. How can friendly people behave worse than less friendly people? Are personal ties the basis of moral behavior? This question calls for further investigation.

Finally, is our third hypothesis confirmed? Is the influence of personal ties on Information Ethics correlated to gender? Given that personal ties had an impact contrary to our expectations, there is little point in pursuing this question as originally posed. As we observed, gender and personal ties are correlated, but the correlation is not as simple as we expected. We may find interesting correlations through continued data analysis, but so far our third hypothesis is not confirmed. Women do not necessarily behave morally on the Internet because of their ability to build personal ties, and there is even evidence against this assertion.

## 5. Conclusion

To conclude, we would like to comment on the skepticism Adam and Ofori-Amanfo have demonstrated regarding the validity of survey data in this kind of study. It is true that some things can only be revealed by in-depth interviews, but there are also things that can only be revealed by survey research. For example, it is hard to establish subtle differences among social groups without large-scale statistical data analysis. This is especially true when we are interested in the relationships between more than two terms. Needless to say, we need to be wary of factors that might influence the honesty respondents. However, as long as we do not have any specific doubt in this regard, we should not simply disregard the unique value of these survey results.

The results presented here are sufficient to demonstrate the importance of survey research. Some of our findings (such as that women are more rational than men, that having more friends on the Internet does not stop people from acting badly and so forth) are counterintuitive, and undermine the premises of certain ethical debates. Another general pattern observed is that variables of both gender and the extent of personal ties have differential effects on behavioral variables on the one hand and awareness variables on the other. By keeping an eye on these factors, we may learn where our weakness of will (doing things we regard as problematic) comes from. Such information is essential to construct a morally desirable community.

In conclusion, we believe that we found some interesting patterns that should not be ignored, although we must take care in interpreting these results. Some

counterintuitive results, such as the relationship between the extent of personal ties and morality, call for further research, including another survey.

## Endnotes

(1) Questions used to measure sympathetic tendency are the following (adopted from Davis):

"I try to look at everybody's side of a disagreement before I make a decision."

"I believe that there are two sides to every question and try to look at them both."

"Before criticizing somebody, I try to imagine how I would feel if I were in their place."

We have similar measures for rational and egoistic tendencies, though we do not have space to go through them.

(2) Exceptions are the effects of Intimacy (a) on BOI and BSI, where the critical values are close to, but more than 0.05. If we set the significance level to 0.10, these differences are also statistically significant. These seeming exceptions are not really exceptions.

(3) Similar intimacy variables in everyday life have different patterns, and are positively correlated with the awareness variables (although we do not have space to present these results). The situation is more complex than suggested in this passage.

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