Information Technology Professionals' Perceived Organizational Values and Managerial Ethics: An Empirical Study

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ABSTRACT. This paper summarizes the results of an analysis of empirical data on ethical attitudes of professionals and managers in relation to organizational core values in the Information Technology (IT) industry. This study investigates the association between key organizational values as independent variables and the ethical attitudes of IT managers as dependent variables. The study also delves into differences among IT non-managerial professionals, mid-level managers, and upper-level managers in their ethical attitudes and perceptions. Research results indicated that IT professionals from mechanistic organizations were much more likely to report – compared to those from organic organizations – that managers in their corporate environment engage in behaviors considered unethical and that successful managers were more unethical relative to unsuccessful managers. There were significant differences between the upper-level managers and the mid-level managers and between the mid-level managers and the IT non-managerial professionals on certain key ethical issues. This paper discusses the conceptual framework, hypotheses, research methodology, data analysis, implications of the findings, and suggested areas of further research.

KEY WORDS: Organizational values, managerial ethics, information technology professionals, mechanistic and organic organizations

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Introduction and conceptual framework

Based on the review of relevant past research studies, the authors assume that one of the primary determinants of the IT professionals' ethical attitudes is their perception of shared key organizational values (Beyer and Trice, 1981; Hunt and Vitell, 1986; Alvesson, 1987; Vitell and Festervand, 1987; Ferrell and Skinner, 1988; Howard, 1990; Vitell and Davis, 1990; Posner and Schmidt, 1992; Jin, 1997; Kaku, 1997; Finegan, 2000).

Over the years management literature and organizational experiences have shown that two main sets of such key organizational values have been manifested in organic and mechanistic organizations (Burns and Stalker, 1961; Bennis, 1977; Hummel, 1982; Adler and Borys, 1996). In an organic environment, managers are likely to perceive the organization as openly collaborative, creative, encouraging, sociable, relationship-oriented, equitable, empowering, and trusting (McGregor, 1960). It is assumed that these are values generally accepted as an ideal social norm pursued in a democratic society. In a mechanistic environment, managers are more likely to perceive the organization to have cautious, task-oriented, rigidly structured, and hierarchical values that are oriented toward centralization, pressure, power, and procedures (Bennis, 1977; Hummel, 1982; Sjoberg et al., 1984; Adler and Borys, 1996). Recent studies have suggested that a mechanistic organization, often characterized as being bureaucratic, can be divided into two subtypes – enabling and coercive – in terms of the extent of the formalization of rules and procedures governing routine work flow (Adler and Borys, 1996). The investigation of these two bureaucratic sub-types as variables in relation to organizational ethics is reserved for our future study. Our own recent study (Jin and Drozdenko, 2003) showed that

direct marketing managers in organic organizational value settings were likely to be more ethically scrupulous than those in mechanistic settings. The current study is thus an extension of this previous study.

The IT managers' assessment or perception of organizational values sometimes combines with personal values to form individual and work-related ethical attitudes. This ethical judgment is assumed to be influenced by deontological evaluations (doing what one believes to be right regardless of its consequences), teleological evaluations (assessing one's action in light of its consequences in the tradition of utilitarianism), or a balance of these two perspectives suggested in the theoretical framework posited by past researchers and practitioners (Hunt and Vitell, 1986). The present research focuses on the study of the influence that the perceived key organizational value clusters (Finegan, 2000) have on the ethics of IT managers, while reserving relationships among other related major variables for future research (see Figure 1).

Hypotheses

Researchers have determined that organizations can be classified as either organic or mechanistic or a combination of the two, based on organizational characteristics or clusters of values (Finegan, 2000). For the purpose of this study, and in light of the results of our recent study (Jin and Drozdenko, 2003) in the Direct Marketing industry, it is hypothesized that the two types of organizations will also be found in the IT industry.

H1: Organizations in the IT industry can be classified as organic or mechanistic based on ratings of organizational value orientations.

The previous discussion of mechanistic and organic organizations points to potential differences in the impact their respective values have on the ethical attitudes of IT professionals. The findings that mechanistic organizations tend to be dysfunctional and that centralized (mechanistic) organizations have a lower level of moral reflection (Bone and Coley, 1998) lead to the following hypothesis.

| Organizational Values Perceived by IT Professionals | → | IT Professionals' and Managers' Attitudes on Organizational Ethics |
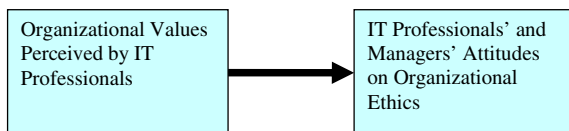
Conceptual Framework
Organizational Values and IT Managerial Ethics

Figure 1. Conceptual Framework: Organizational Values and IT Managerial Ethics.

H2: IT professionals working in a mechanistic organizational value setting will report higher levels of unethical behavior in their organizations compared to IT professionals working in an organic organizational value setting.

The study of Vitell and Davis (1990) indicated that MIS professionals believed that in their work environment many opportunities for unethical behaviors existed. However, their research findings also showed that MIS managers were unlikely to engage in unethical behavior, and that successful managers were perceived as more ethical than unsuccessful ones by a majority of MIS professionals. Posner and Schmidt (1984, 1992) examined how supervisory, mid-level and executive managers perceived ethical behavior in their organizations. In their 1992 study, they found that executive managers were more likely to believe that their organization was ethical relative to the beliefs of mid-level and supervisory managers. For example, while 78% of executive managers agreed that their organizations seemed to be guided by highly ethical standards, less than 65% of the supervisory and mid-level managers agreed. Similar discrepancies were found on survey items related to frequency of unethical behavior and satisfaction about the general ethics of the company. The executive managers perceived the organization as more ethical relative to the two other levels of management.

Similarly, our previous business ethics study (Jin and Drozdenko, 2003) of Direct Marketing managers suggested that upper-level managers perceived organizational ethical issues differently from mid-level managers. It seems that mid-level managers in mechanistic organizations have a greater tendency to report that their organization has unethical characteristics. As an extension of these previous studies, we wanted to investigate further potential differences between the ethical attitudes and perceptions of IT upper-level managers and mid-level managers and those of IT managers and non-managerial professionals.

H3: There are differences among IT non-managerial professionals, IT mid-level managers, and IT upper-level managers in their perception of organizational ethics.

Research methods

Data collection method and measures

This survey was conducted online. We sent an email to the 3,700 professional (i.e., non-student) members of the Association of Information Technology Professionals (AITP) requesting their participation and linking them to the survey website. We received 328 completed responses. Allowing for 1–2% delivery errors, the response rate was about 9%. The survey questionnaire contained demographic items and items related to organizational value characteristics, organizational ethics, and individual ethics.

Respondents were asked to evaluate the extent to which items pertaining to organizational characteristics and values described their organization. These were managerial ideological items previously used by Beyer and Trice (1981) and Harrison (1988). This section of the survey was used to classify organizations as being organic or mechanistic. Respondents were also asked to indicate the extent of their agreement with the same items related to values of their organization.

Another section of the survey asked respondents to indicate the extent of their agreement with items related to personal ethics and an organization's ethics in general. The items reflected a combination of (a) ones used previously by Forcht (1987) and Vitell and Davis (1990), and (b) similar items developed by the researchers for the objectives of this study. The responses were used to assess respondents' ethics, attitudes, and behavior.

Respondents were also asked to provide information about themselves and their organizations. The organizational information included industry category, number of employees, organizational role, job title, and existence of a code of ethics. The information about the respondent included sex, age, highest level of education, and household income.

The study instrument contained 51 questions on personal or organizational ethics, 24 questions on organizational values and characteristics, and 14 questions related to respondent demographics. A total of 440 respondents replied to at least some part of the survey.

The respondents represented a wide range of organizations: 66% were from businesses, 16% from not-for-profits, and 18% from government agencies.

TABLE I

Two perceived organizational value clusters

Values	Organic	Mechanistic
Risk taking	0.354	−0.065
Collaborative	**0.652**	0.152
Hierarchical	−0.055	**0.745**
Procedural	0.169	**0.689**
Relationships-oriented	**0.566**	0.130
Results-oriented	**0.596**	0.320
Creative	**0.739**	0.041
Encouraging	**0.794**	−0.057
Sociable	**0.696**	0.043
Structured	0.139	**0.723**
Pressurized	0.013	0.422
Ordered	0.263	**0.560**
Stimulating	**0.733**	0.060
Regulated	0.011	**0.678**
Personal freedom	**0.555**	−0.129
Equitable	**0.676**	0.067
Safe	0.470	0.267
Challenging	**0.603**	0.284
Enterprising	**0.711**	0.138
Established, solid	0.350	0.498
Cautious	0.056	0.492
Trusting	**0.676**	0.075
Driving	**0.537**	0.315
Power-oriented	−0.081	**0.559**

About 32% of the respondents classified themselves as holding upper-level management positions in their organization, 52% indicated mid-level positions, and 16% ranked themselves at the professional or lower management level. Around 83% of the respondents held at least a bachelor degree; 70% were male; and the majority of respondents were 40 years of age or older. In terms of college majors, 37% had been business majors (including 17% business-based MIS/IT); 40% had been technical majors (e.g., MIS, Computer Science, and Engineering); and 20% had been liberal arts, humanities, and education majors.

This nationwide AITP sample represented a wide range of types of organizations for which the responding members worked. Of 430 total respondents, 13% were employed in information management, 19% in education, 14% in consulting and research, 9% in manufacturing, and 45% in the service industry (including marketing, finance/accounting, healthcare, and legal services).

Data analysis

As we hypothesized, we were able to classify key organizational values perceived by the respondents into two primary types of value clusters, as conceptualized above. The factor loadings resulting from Principal Components Factor Analysis with Varimax rotation are presented in Table 1.

Extractions were manually limited to two factors in order to be consistent with the dichotomous hypotheses regarding organizational type. Factor loadings greater than 0.50 are represented by bold type. These two factors were named ''Organic'' and ''Mechanistic'' as they were consistent with the existing theory. The organic factors accounted for 26.2% of the variance and the mechanistic factors accounted for 15.7%.

Using the variables associated with the high loadings for each factor, a mean score for organic and mechanistic classification was developed. Organizations were classified according to which mean score was larger. Approximately, 51% of the organizations were classified as organic while 49% were classified as mechanistic. This scheme of characterizing organizations based on the mean scores was used as an independent variable in the following analysis. (Using the factor scores for classifying the organizations yielded similar results in the following analyses. The two methods of classification, mean and factor scores, had a Pearson Correlation coefficient of 0.823 $p < 0.001$).

Our findings also support our second hypothesis. A Multivariate Analysis of Variance was performed with the 31 survey items as dependent variables and the organic or mechanistic organizational type as the independent variable. The multivariate F-value was 2.78 $p < .001$ (df = 31, 289). Individual survey items, univariate levels of statistical significance and organization type means are presented in Table 2.

If a conservative adjustment (.05 p-level/31 possible items = 0.0016) is made to the p-level to compensate for alpha inflation, F-values significant at the 0.001 p-level or lower in Table 2 would still reach statistical significance given the 0.05 criterion.

In regard to the third hypothesis, the multivariate test of the three occupational groups (upper-level managers, middle-level managers, and non-managerial professionals) for 11 items related to organizational ethics was found to be statistically significant $F (22, 626) = 1.61$, $p < .04$. The

TABLE II

Organizational value clusters and organizational ethics

Organizational ethics items	Scale: 1 − Strongly agree; 5 − Strongly disagree		
Item	p Level	Organic	Mechanistic
Top management in my company has let it be known in no uncertain terms that unethical behaviors will not be tolerated.	0.001	1.764	2.167
Managers in my *industry* often engage in behaviors that I consider to be unethical.	0.001	3.727	3.301
There are many opportunities for managers in my *industry* to engage in unethical behaviors.	0.798	2.667	2.635
Managers in my *company* often engage in behaviors that I consider to be unethical.	0.000	4.085	3.538
There are many opportunities for managers in my *company* to engage in unethical behaviors.	0.365	3.079	2.962
In order to succeed in my company, it is often necessary to compromise one's ethics.	0.000	4.382	3.782
Successful managers in my company are generally more unethical than unsuccessful managers.	0.000	4.158	3.577
Successful managers in my company take credit for the ideas and accomplishments of others.	0.000	3.733	2.974
Successful managers in my company withhold information that is detrimental to their self-interests.	0.000	3.715	3.038
If a manager in my company is discovered to have engaged in unethical behavior that results primarily in personal gain (rather than company gain) he/she will be promptly reprimanded.	0.000	1.976	2.423
Successful managers in my company attempt to make rival managers look bad in the eyes of important people in my company.	0.000	3.939	3.321
Successful managers in my company look for a ''scapegoat'' when they feel they may be associated with failure.	0.000	3.764	2.962
Successful managers in my company withhold information that is detrimental to the company's interests.	0.000	3.897	3.340
My organization adequately communicates the code of ethics and ethical guidelines to employees.	0.035	2.358	2.615

significance levels and mean differences of the individual items are listed in Table 3. Asterisked means are significantly different at the 0.05 level or less.

For the three ethics statements in Table 3 (items 1, 13 and 31) there were significant differences between mid-level managers and non-managerial professionals. The latter more strongly agree, relative to mid-level managers, with the statement that top management is not tolerant of unethical behaviors and that ethics codes are adequately communicated.

The non-managerial professionals also agree less with the statement that there are many opportunities in the company for unethical behavior. Taken together, these three items indicate that mid-level managers seem to believe that the organization's environment was more conducive to unethical behavior relative to the beliefs of non-managerial professionals.

With respect to the three statements related to the ethics of successful managers (items 17, 20, and 22 in

TABLE III

Perceived organizational ethics of occupational groups

#	Organizational ethics items	Scale: 1 – Strongly agree; 5 – Strongly disagree		
	Item	p-level	Upper ($n = 71$)	Middle ($n = 76$)	Profes ($n = 178$)
1	Top management in my company has let it be known in no uncertain terms that unethical behaviors will not be tolerated.	0.039	1.901	2.237★	1.865★
11	Managers in my company often engage in behaviors that I consider to be unethical.	0.754	3.887	3.750	3.815
13	There are many opportunities for managers in my company to engage in unethical behaviors.	0.043	3.085	2.724★	3.112★
17	Successful managers in my company are generally more unethical than unsuccessful managers.	0.015	4.169★	3.684★	3.837
20	Successful managers in my company take credit for the ideas and accomplishments of others.	0.052	3.620★	3.158★	3.360
22	Successful managers in my company withhold information that is detrimental to their self-interests.	0.052	3.620★	3.171★	3.388
24	If a manager in my company is discovered to have engaged in unethical behavior that results primarily in personal gain (rather than company gain) he/she will be promptly reprimanded.	0.376	2.127	2.329	2.157
26	Successful managers in my company attempts to make rival managers look bad in the eyes of important people in my company.	0.440	3.718	3.513	3.674
29	Successful managers in my company look for a ''scapegoat'' when they feel they may be associated with failure.	0.156	3.577	3.197	3.360
30	Successful managers in my company withhold information that is detrimental to the company's interests.	0.343	3.789	3.566	3.584
31	My organization adequately communicates the code of ethics and ethical guidelines to employees.	0.033	2.606	2.724★	2.360★

Table 3), we found that there were significant differences between upper and mid-level managers. Compared to the upper-level managers, the mid-level managers indicated a higher level of agreement with the perceptions that successful managers were more unethical relative to unsuccessful managers, that successful managers took credit for the ideas and actions of others, and that they withheld information detrimental to their self-interests.

Discussion

The analyses of the data in this study provide support to the following three hypotheses.

H1: IT professionals will report organizational value characteristics that can be classified in clusters as representing either organic or mechanistic organization types.

Similar to our previous findings (Jin and Drozdenko, 2003), two types of organizations were identified in this study. Using a factor analysis (see Table 1), one type of organization loaded highly on variables such as collaborative, relationships-oriented, results-oriented, creative, encouraging, sociable, stimulating, personal freedom, equitable, challenging, enterprising, trusting, and driving while the other organization type was associated with values such as hierarchical, procedural, structured, ordered, regulated and power-oriented.

H2: IT professionals working in a mechanistic organization will report higher levels of unethical behavior in their organizations compared to IT professionals working in an organic organization.

There was strong support for H2. Of the 31 items in this section 21 were found to have significantly different mean responses for the two types of organizations. In particular, 14 items directly related to unethical behavior (see Table 2) (e.g., "managers in my organization often engage in behaviors I consider to be unethical") revealed a higher level of perceived unethical behavior in mechanistic organizations. There also seemed to be a stronger ethical direction set by organic organizations as indicated by a higher level of agreement with those items indicating that top management will not tolerate unethical behavior, and codes of ethics are adequately communicated. On the other hand, respondents in mechanistic organizations perceived a higher level of control by supervisors. So, while there were higher levels of perceived supervisory control in mechanistic organizations relative to organic organizations, this control did not result in a suppression of unethical behavior. These findings are similar to those of our previous research (Jin and Drozdenko, 2003).

The higher level of ethical values exhibited by IT professionals in organic organizations as opposed to those in mechanistic organizations can be explained, at least in part, by the gap between the bureaucratic norms and generally-accepted social norms (Hummel, 1982). Hummel observes that the culture in bureaucratic environments represents a set of key values, i.e., the mechanistic organizational values discussed above that is very different from those of organic organizations. Those who work in bureau-

cracies are required to follow the restrictions, rules and regulations, and norms imposed by the bureaucracy that are often not congruent with the social norms by which we freely interact with other members of society. These bureaucratic restrictions and norms are also not conducive to the promotion of fundamental ethical core values accepted in general by a society. Hummel suggests that professionals who work in bureaucracies "unconsciously pursue their self-interest in collaborating with bureaucracies while maintaining an image of disinterested non-partnership" (p. 10, fn). One might assume that those who are in bureaucracies might be more interested in fulfilling their work obligations by adhering to the bureaucracies' norms, procedures, and rules and regulations than in being concerned with extra-bureaucratic norms that may not be consistent with their bureaucratic ones.

This may be true if bureaucratic-norm-bound IT professionals believe in their self-interest being defined by their collaboration with a bureaucracy. In this context, their bureaucratic actions required within the bureaucratic rule-bound world may override the ethical norms and social responsibility values even if such a behavior is construed as "unethical" or "not socially responsible" according to the socially accepted ethical values and norms. For example, this way of thinking is reflected in the survey question statement "Successful managers in my company withhold information that is detrimental to the company's interests." According to the generally upheld social norms, an agreement with this statement would be construed as being unethical by those who hold the deontological view of ethics. However, according to the bureaucratic restrictive control norms, in a teleological sense, such responses – withholding information in this case – may be considered as ethical or not unethical if the respondents, as workers in bureaucracies, feel that withholding information may serve the company's interest and that they are ethically bound to protect the bureaucratic organizational interests. This may hold true especially if their action is consistent with their self-interest to survive. This way of thinking may explain the results of our survey respondents working in mechanistic or bureaucratic organizations, i.e., their perception of higher degree of unethical behaviors relative to those in organic organizations.

H3: There are differences among IT non-managerial professionals, IT mid-level managers, and IT upper-level managers in their perception of organizational ethics.

The research results suggest that mid-level managers in the IT profession perceive the ethical environment of the organization differently compared to both upper-level managers and non-managerial professionals. Specifically, mid-level managers are more likely to perceive the organization as not supporting an ethical environment and see successful managers as being less ethical than the other two occupational groups are. This seems to be consonant with the finding of Posner and Schmidt (1984, 1992) that executive managers were more likely to believe that their organization was ethical relative to the beliefs of mid-level and supervisory managers.

In general, the upper-level managers and non-managerial professionals tended to share ethical perceptions consistent with each other, but different from those of mid-level managers. An interpretation of this finding may be that mid-level managers, especially those in a mechanistic or bureaucratic value setting, tend to be more cynical as they are more familiar with real organizational shortcomings and often concealed ethical problems through informal interactions with top management and IT professionals (Sjoberg et al., 1984; Jin, 2000). The upper-level managers, lacking direct contact with the non-managerial professionals and therefore with real problem situations, may view the ethical environment more positively than the mid-level managers and non-managerial professionals. Likewise, the latter, not being in direct contact with upper-level managers and therefore with internal unethical environmental complexities, may have a more positive view of the ethical climate, ethics policy guidelines, and formal communication of ethics code compared to mid-level managers.

Limitations of this research

To verify the above perceptual findings based on our survey research, against the real-world actual ethical behaviors that often occur in the informal or hidden political organizational settings (Sjoberg et al., 1984), we suggest using the participant action research strategy (Lewin, 1946; Greenwood et al., 1993;

Hindle et al., 1995; Baskerville and Wood-Harper, 1996; Jin, 2000). In the action research approach, the researchers are insider-participants or participant observers in the de-facto real-life organizational value and ethical decision-making processes. They can work with practitioners to collect data on the impact of manipulating independent variables on dependent variables during formal and informal political interactions among the organizational members. For our study, this would also mean verifying more definitively if transitioning from mechanistic to organic value orientations would actually change perceptions about ethical behaviors. Past studies adopted the action research method to confirm, verify, and interpret the results from a survey study (Kaiser and Bostrom, 1982). The relevance of the findings of this research needs to be understood and interpreted in terms of the specific historical experiences of an organization (Mason et al., 1997).

Recommendation for further research

We suggest that further research analyze the relationship between the ethical attitudes of IT professionals and the existence and enforcement level of an ethics code within the organization. For example, it would be interesting to examine the interaction of organic or mechanistic organization types with the existence of an ethics code. This poses a future research question: does the presence of a strictly enforced ethics code impact ethical behavior differently in organic versus mechanistic organizations? The results of this future research on IT professionals should be compared to prior studies of marketing and sales professionals involving the relationship between organizational values and the enforcement of ethics codes and guidelines (Somers, 2001; Valentine and Barnett, 2002, 2003).

Another similar yet meaningful study would be to delve into discovering if there are any differences between managers in three different sectors – business, government, and civil society. It would also be interesting to investigate differences between the two types of bureaucracy (i.e., enabling and coercive) and between the enabling bureaucracies and the organic organizations in terms of their IT managers' perceived organizational values and ethical attitudes.

It is suggested that, as we have already begun, further research explore the relationship among key organizational value clusters, social responsibility, ethics, and organizational performance outcomes. A previous study (Vitell and Paolillo, 2004) investigated the role of the perceived importance of ethics and social responsibility in the organizational decision-making process. Vitell et al. (2003) examined the effect of antecedent variables (e.g., power distance, uncertainty avoidance, individualism, masculinity, and Confucian dynamism, corporate ethical values, and enforcement of an ethical code) on an individual marketer's perceptions of the importance of ethics and social responsibility to the long-term success of the organization. It would be significant and interesting to examine the association between the ethical attitudes of IT managers and professionals and their social responsibility orientations as antecedents for the organizational performance outcomes.

Conclusions

The above findings seem to support the previous study by Bone and Coley (1998), which found that moral reflection by employees tends to decrease as centralization (as a main tenet of bureaucratic or mechanistic organizations) increases. Our study shows that IT managers in organic organizations are perceived as being more ethically scrupulous and committed relative to the perceptions of IT managers in mechanistic organizations.

Some major findings of this study, substantiated by the data in Table 2, are summarized in the statements below. The type of organization with the significantly stronger degree of agreement is indicated in *Italics*.

- Top management in my company has let it be known in no uncertain terms that unethical behaviors will not be tolerated. *Organic*
- Managers in my industry often engage in behaviors that I consider to be unethical. *Mechanistic*
- Managers in my company often engage in behaviors that I consider to be unethical. *Mechanistic*
- In order to succeed in my company, it is often necessary to compromise one's ethics. *Mechanistic*

- Successful managers in my company are generally more unethical than unsuccessful managers. *Mechanistic*
- Successful managers in my company take credit for the ideas and accomplishments of others. *Mechanistic*
- Successful managers in my company attempt to make rival managers look bad in the eyes of important people in my company. *Mechanistic*
- Successful managers in my company look for a "scapegoat" when they feel they may be associated with failure. *Mechanistic*

These findings are also consistent with our previous study, which involved direct marketing managers (Jin and Drozdenko, 2003). The findings are also consonant with the key results of a series of previous longitudinal studies by Posner and Schmidt (1984, 1992). These cross-industry research results imply that persisting to transform a mechanistic organizational value orientation to an organic one, which represents higher social, humanistic, and democratic values, could reduce the potential risks of unethical behaviors. The organizations in the IT industry that have mechanistic or bureaucratic value orientations need not only to confront the problems of competing in a dynamic marketplace, but also to meet the challenge of coping with a lack of corporate ethical scrupulousness. Therefore, managerial leaders in the IT industry must seriously consider the critical role of a more flexible, decentralized, and organic environment in cultivating IT managerial ethics.

Acknowledgement

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