

# Religious Beliefs and Responsibility Attributions for Industrial Accidents among Ghanaian Workers

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## Abstract

The study reported here explored the possible influences of workers' religious beliefs on causal attributions and responsibility assignment in the work environment. Ghanaian industrial workers affiliated to three main religious groups (Christianity, Islam, and Traditional African Religion) and who were victims and witnesses of industrial accidents, assigned causality and responsibility for the misfortune. Their responses were compared. The major finding was an association between religious affiliation and accident responsibility assignment. It was noted that workers affiliated with Islam and Traditional African religions, more than their Christian counterparts, tended to emphasise spiritual influence on accident causality and responsibility. Correspondingly, they also offered more contextual and external attributions. This observation seems to reflect the fatalistic belief that industrial accidents are beyond human control and occur with inevitability. The study was done within the context of the Self-defensive Attribution Hypothesis. The substantial growing interest in diversity management in workplaces makes addressing topics on the impact of workers' religious orientations on organizational behaviours an essential study.

## Introduction

Attribution theory basically deals with how people explain their social world and its many phenomena, and conceptualises their causality and responsibility assignment as either logical or biased. According to the literature on causal attribution and accidents, attributional distortions are quite common in novel and ambiguous situations (Wong & Weiner, 1981) such as occurrences in industrial accidents (DeJoy, 1994; Turner & Pidgeon, 1997). As industrial accidents tend to afford fertile grounds for causal and responsibility attributional distortions, the work environment seems to be the appropriate domain to examine evidence of these biases and distortions. An example of such attributional distortion occurs when people make use of self-protective mechanisms to project blame for their personal failures onto external circumstances. This has been labelled the Self-defensive Attribution Hypothesis (Shaver, 1970; Walster, 1966). The defensive attribution hypothesis has been confirmed in laboratory studies (see Chaikin & Darley, 1973) and received empirical support from workplace research (Gyekye, 2001; Gyekye & Salminen, 2004; Kouabenan et al., 2001).

## Religious Beliefs and Social Behaviour

Religion plays an essential role in human meaning system by providing a frame of reference for interpreting a whole range of experiences. For example, a person's religious beliefs impact on his/her personal response to illness, tragedies, accidents and misfortunes. This relationship between religious beliefs and human behaviour has intrigued both the earlier (see Allport, 1953; Durkheim, 1951; James, 1902) and contemporary (see Chatters, 2000; Levin, 1997; Levin & Chatters, 1998) researchers in the psychology of religion. By using religious beliefs as a framework, researchers have examined and found different personality constructs for adults (Wade & Kirkpatrick, 2002), as well as important links between people's socio-religious beliefs and their attitudes and behaviour (Levin, 1997; Weaver & Agle, 2002). In corroboration with these findings, researchers on the sociology of religion (Ajzen, 1996; Chatters, 2000; Levin, 1997; Levin & Chatters, 1998; Kenworthy, 2003) have all noted that belief in God plays a causal or explanatory role in human behaviour.

Remarking on the applicability of attribution concepts to the psychology of religion, Spilka et al. (1985) have noted that attributional activity consists, in part, of an individual's attempt to understand events and interpret them in terms of some broad meaning-belief system. According to these experts, most people have at their disposal three separate explanatory systems: (i) a set of naturalistic or secular schemas, and (ii) a set of religious schemas (e.g., God, Satan, evil activities) or (iii) to some combination of these two factors, which may or may not be used in a mutually exclusive manner.

## The Current Study

Despite the relevance of religion and its influence on several aspects of social behaviour, studies on attribution processes, biases, and distortions have typically been limited to explanations of social behaviour outside the work environment (see Kenworthy, 2003; Weeks & Lupfer, 2000). In effect, socio-religious beliefs that relate to fatalism, determinism, and beliefs about accident causality, which all play a central role in attribution theory have therefore not been adequately investigated. To the degree that belief in God and the supernatural play a causal or explanatory role in behaviour, they necessitate an exploratory examination in accident causality and responsibility assignment. The current study was thus designed to fill in the paucity. Consequently, it examines how religious beliefs, as dimensions of socio-cultural values, are related to the assignment of causality and responsibility for industrial accidents among Ghanaian industrial workers. Specifically, (i) it compares causality attributions for accident occurrence between workers affiliated with Christianity, Islam and African Traditional Religions and (ii) their accident frequency.

## Religiosity in Ghana

Religion permeates all aspects of African life and thought. There is no dichotomy between religion and society in Africa. Religion is therefore an essential tool for understanding and appreciating the behaviour and lifestyle of African peoples. Religion is thus such an integral part of life and culture among Ghanaians that 98% claim belonging to a religious denomination, and 82% professing regular attendance to churches, mosques and shrines (Gallup International, 2000). Research that has examined the relationship between religion and various aspects of social behaviour among Ghanaians has found religion to be a significant predictor of behaviour change: for example, studies indicate a close association between religious affiliation and knowledge of H.I.V. Aids (Takyi, 2003), contraceptive use (Addai, 2000) and family planning (Takyi & Addai, 2002).

The three main religious groups are Christianity, Islam and Traditional African Religions. Official figures released by Ghana Statistical Services in 2000 puts Christians at 67%, Muslims 18%, Traditionalists 10%, and people of other and no religions at 5%. All three religious groups have identical religiously based views on work. Work-related values among Christians (better known as The Protestant Work Ethic - PWE) and Muslims (The Islamic Work Ethic - IWE) tend to emphasise hard work, integrity, responsibility, fairness, accountability, commitment and dedication to work (Ali, 1992; Baguma & Furnham, 1993; Weber, 1930; Yousef, 2001). Workers with strong religious convictions have considered work as a vocation and ultimately, an explicit part of their religious role identity (Davidson & Caddel, 1994; Hafsi, 1987). Despite the observed

close association between religious involvement and the centrality of work, research on the impact of religious beliefs in the work environment is relatively sparse. The link between workers' religiosity and causality attributions has drawn little interest, and no study was found on the relationship with responsibility assignment for workplace accidents. The current study was thus designed to fill the gap.

## Hypothesis and Methodology

Given the lack of empirical research on the association between workers' religiosity and causality attributions, no formal research hypothesis was offered. The current study is part of a larger empirical study that examined the causal and responsibility attributions for industrial accidents in Ghana's work environment (Gyekye, 2001). The participants were actual victims, witnesses and supervisors involved in workplace accidents, and comprised 320 Ghanaian industrial workers from mines and factories. Of these, 120 were accident victims, 118 witnesses (or co-workers) and 82 supervisors. Their average ages were as follows: accident victims 37 years (std = 9.71), witnesses (co-workers) 35 years (std = 8.22), and supervisors 44 years (std = 6.80). A general profile of the sample is presented in Table 1. The main observation is that the distribution in the subgroups and the overall group was similar, with Christianity being the predominant religion.

Table 1 Religious Distribution of the Participants

	Christianity	Islam	Traditionalists	Others
Group	%	%	%	%
Total (320)	66	22	9	3
Victims (120)	63	19	12	6
Coworkers (118)	66	25	6	3
Supervisors (82)	70	20	9	1

\*A small group of religious adherents (Buddhists, Shintos and atheists) who do not fit into the three main groups

All accident victims and supervisors were men, whereas 14% of the witnesses (co-workers) were women. To ensure the accident severity dimension that is crucially needed in self-defensive attributions (Kouabenan et al., 2001; Shaver, 1970), all reported cases in this study were among those classified as serious by the Factories and Mines Inspectorates. Temporary injuries in which victims were absent for less than 3 days of work activity were thus excluded from the data. To encourage forthrightness, the participants were assured that their responses would be handled confidentially and that their organisations would have no access to any information provided. To elicit a fair recall of the accident process, indus-

trial workers who had been involved in, or witnessed, accident occurrences less than 18 months before the research study were selected as respondents.

A structured questionnaire was used in the assessment. Participants responded to the questionnaire interview during lunch breaks. It consisted of 30 questions with a five-point response format (1 = Very little to 5 = Very much). These were causal explanations generated for the accident occurrence, and classified as factors reflecting the dispositional qualities of the accident victims (internal factors), or those of the situational and environmental factors (external factors). In effect, all attributions for the accident process were coded as being either internal or external. This allowed the respondents to rate their attributions along dimensions of external and internal causality factors.

The questionnaire was presented in English. Where respondents were illiterate or semi-illiterate and had problems understanding English, the services of an interpreter were sought and the local dialect was used. The duration varied from 15 to 20 minutes, depending on the context in which they were conducted, and on respondents' level of education. The supervisors were educationally sound and filled in the questionnaire on their own. To ensure accuracy of responses, it was emphasised that the study was solely for academic purposes and that no person affiliated with their organisation was in any way involved. Due to the nature of the study, special interest was paid to the participants' perception of the role of supernatural manifestations in the accident occurrence. The internal coherence and reliability of the External and Internal Causal Scales was tested with Cronbach's alpha coefficient. Acceptable coefficients of .89 and .79 were obtained for the External and Internal causal factors respectively, indicating high inter-item consistency.

Three sets of statistical analyses were employed. First, to assess the participants' perception of sorcery and witchcraft on the accident occurrence, the responses to two questions that implicated supernatural manifestations for the accident occurrence were assessed:

- Accident victim was a victim of some curse/spell/witchcraft;
- Accident victim was a victim of religious beliefs (invincibility from harm).

One-way analysis of variance (ANOVA) and Chi-square test ( $\chi^2$ ) were calculated to assess the workers' perceptions of supernatural influences on the accident process. It was expected that participants representing a religion that stresses fatalism would place more emphasis on the influence of the supernatural (witchcraft and sorcery) as causal factors. The next step in the statistical analyses involved an assessment of the participants' responsibility assignment for the accident occurrence. Responsibility assignment was explored by analysing the participants' responses to the *Responsibility Question*: "Who/what do you hold responsible for the accident occurrence?"

The Chi-square test ( $\chi^2$ ) was used to test for statistically significant differences among the three religious groups' responsibility attribution. It was antici-

pated that fatalistically-oriented participants with their high perception of the role of non-personal factors as causal agents would attribute more to *Nobody*. The final part involved a follow-up analysis that assessed the degree to which these three categories of workers evaluated preventive measures. The analysis was based on the percentile scores of the participants' responses to the question: "What improvements in occupational safety measures at the workplace could be effected to curtail the recurrence of such accidents?"

Response alternatives were:

- (a) Machines & appliances
- (b) Organisation & distribution of duties
- (c) Workers' orientation programmes
- (d) Workers – management relationship
- (e) Other, specify.

It was anticipated that workers who were fatalistically oriented would tend to see accident prevention methods more in non-personal factors than as personal responsibilities.

## Results

Table 2 shows the means and standard deviations of workers affiliated with the three major religious groups. The total scores for the Internal scale was (mean 34.01 and standard deviation 5.99), and for the External scale (mean 49.87 and standard deviation 7.62), respectively. That the workers' religious beliefs had an effect on their causality and responsibility attributions is evidenced by the fact that among the 30 causality factors, attributional differences of statistical significance were recorded only for two items that had spiritual implications for the accident occurrence. They were by victims: *curse/spell/witchcraft* ( $f(3,92) = 13.31$ ,  $p < .0001$ ), and *religious beliefs* ( $f(3,91) = 13.38$ ,  $p < .0001$ ), and by witnesses: *curse/spell/witchcraft* ( $f(3,79) = 3.25$ ,  $p < .0001$ ), and *religious beliefs* ( $f(3,80) = 2.98$ ,  $p < .0001$ ), and by supervisors: *curse/spell/witchcraft* ( $f(3,71) = 2.96$ ,  $p < .0001$ ), and *religious beliefs* ( $f(3,71) = 5.40$ ,  $p < .0001$ ). Traditionalists made the highest attributions, followed by their counterparts with Islamic and Christian backgrounds.

Table 2 .

Causal Factors	Christians			Muslims			Traditionalists			P value
	N	Mean	Std	N	Mean	Std	N	Mean	Std	
Low wages	76	3.24	1.46	23	3.61	1.64	14	3.86	1.41	n.s
Time & trouble saving	75	4.07	0.81	23	4.43	0.51	14	4.04	1.21	n.s
Work overload	75	4.39	0.54	23	4.39	0.49	14	4.07	1.21	n.s
Defective equipment	71	2.79	1.33	22	3.00	1.57	14	2.86	1.65	n.s
Inadequate training	75	2.75	1.29	23	3.17	1.15	14	2.64	1.33	n.s
Pressure from management	75	4.29	0.73	23	4.08	0.95	14	3.86	1.29	n.s
Coworker's fault	73	2.60	1.34	22	2.59	1.09	14	2.14	1.19	n.s
Loss of concentration	65	2.26	1.09	20	2.35	1.14	13	2.92	1.18	n.s
Operational procedures	76	4.29	0.73	23	4.22	0.52	14	3.79	0.89	n.s
Misassignment	76	2.80	1.33	23	2.65	1.40	14	3.50	1.22	n.s
<b>Curse/spell/witchcraft</b>	<b>58</b>	<b>2.47</b>	<b>1.08</b>	<b>21</b>	<b>3.66</b>	<b>1.06</b>	<b>14</b>	<b>3.92</b>	<b>1.14</b>	<b>**</b>
<b>Religious beliefs</b>	<b>58</b>	<b>2.52</b>	<b>1.08</b>	<b>20</b>	<b>3.75</b>	<b>1.11</b>	<b>14</b>	<b>3.93</b>	<b>0.91</b>	<b>**</b>
Poor housekeeping	76	3.54	1.30	23	3.34	1.15	14	2.93	1.21	n.s
Lack of protective gear	76	3.44	1.43	23	3.78	1.28	14	3.64	1.55	n.s
Ambiguity of task	76	3.26	1.14	23	3.35	1.07	14	3.29	1.20	n.s

Further analyses of spiritual influences and the role of supernatural forces in the accident process confirmed this observation. Chi-square calculation indicated that the Traditionalists and the Muslims, more than their Christian counterparts, significantly considered the accident process as having been caused by some supernatural forces, e.g. curses, spells, witchcraft ( $c^2 = 64.77$ ,  $df = 6$ ,  $p < .001$ ). Workers' belief in immunity and invincibility from harm and danger was also evidenced ( $c^2 = 57.59$ ,  $df = 6$ ,  $p < .001$ ). The Traditionalists and Muslims believed that the accident could have been avoided if the victims *protected themselves spiritually*. 58% of Traditionalists and 47% of their Muslim counterparts held this view. By contrast, relatively few Christian workers (10%) believed in this form of spiritual immunity. These preliminary observations seem to suggest that Traditionalists and workers affiliated with Islam seem to display fatalistic inclinations about accident occurrences.

Regarding responsibility assignment, the chi-square analysis pointed out a statistically significant association between religious affiliation and the assignment of responsibility for accidents ( $c^2 = 45.20$ ,  $df = 3$ ,  $p < .001$ ). Traditionalists and workers affiliated with Islam, more than their Christian counterparts, placed greater emphasis on non-personal agents as responsible for the accident occur-

rence. The difference on accident frequency was of statistical significance ( $f(3, 298) = 7.82, p < .0001$ ), and was highest among Traditionalists.

Table 3 showed the correlations between 15 external causal factors. The highest correlation coefficient was found between two religious factors: curse/spell/witchcraft and religious faith ( $r = .87$ ). These factors were also significantly connected with low wages and religious faith with inadequate training.

## Discussion

Overall, the functional character of religious beliefs and perceptions of accident causality are clearly visible in the current data. The major finding was an association between religious affiliation and accident responsibility assignment. The three categories of workers clearly appeared to arrive at different interpretations of the accident occurrence. While responsibility for the accident causality among the Christian workers seemed to be focused on negligent behaviour on the part of the workers that of Muslims and Traditionalists seemed to be focused on supernatural influences and sorcery.

The main plausible explanation for this observation could be found in the varying causal belief system in the differing socio-religious doctrines. Drawing from the theory of social cognition, these religious attributions are based on pre-existing causal theories or schemas (Fiske & Neuberg, 1990; Weeks & Lupfer, 2000) which is consistent with the religious beliefs they adhere to. For Muslims and Traditionalists, human activities are mostly controlled by mystical and spiritual beings that govern the whole of reality. Islam and Traditional African religious spirituality stress fatalism, determinism and belief in the immutability of human affairs: a belief that reflects the fatalistic and deterministic view that events occur with inevitability and are beyond human control. Causal explanations, therefore, especially regarding calamities such as the reported severe industrial accidents under study, are usually ascribed to spiritual and supernatural powers that are beyond human control (Fisher, 1998; Mbiti, 1990; Sarpong, 1974) and therefore tend to carry a fatalistic connotation.

In addition to believing in a creator upon whom ultimately everything in the universe depends, Traditionalists in particular also believe in deities and spirits to whom public cult is directed (Fisher, 1998; Mbiti, 1990). These gods and ancestral spirits demand worship and obedience from their subjects, and so not infrequently, devotees go to shrines to propitiate them. In default of this, the spirits allegedly inflict punishment. It is therefore a common belief among these practitioners that people's mischief, particularly those in defiance of taboos or purification rituals, can call the wrath of the gods upon themselves. Thus, the Traditionalists, in particular, significantly perceived that the accident process was a result of the victims' disregard for their spiritual obligations. On the other hand, when the religious obligations and rites have been performed, adherents



Table 3

**Intercorrelations of External Causal Factors**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Low wages	1														
2. Time & trouble saving	.03	1													
3. Work overload	.16	.15	1												
4. Defective equipment	.51***	.14	.14	1											
5. Inadequate training	.31	.35***	.06	.03	1										
6. Pressure from mang.	.27	.33*	.17	.17	.08	1									
7. Co-workers fault	-.05	-.07	.08	-.05	.09	.04	1								
8. Loss of concentration	.13	-.03	.03	.99	.16	.00	-.12	1							
9. Operational procedure	.35***	.24	.18	.18	.16	.15	.31*	.01	1						
10. Misassignment	-.01	-.07	-.26	.00	.19	-.07	.19	.13	-.03	1					
11. Curse /spell /witchcraft	.24*	.13	-.11	.19	.14	-.11	-.11	.10	-.08	.07	1				
12. Religious faith	.26*	.11	-.05	.14	.22*	-.09	-.06	.00	-.09	.06	.87***	1			
13. Poor housekeeping	.29	.17	.06	.19	.19	.19	.03	-.10	-.05	.21	-.06	.30	1		
14. Lack of protective gear	.49***	.08	-.04	.27	.33*	-.07	.16	.15	.06	.00	.21	.24	.21	1	
15. Ambiguity of task	.04	.09	-.07	-.10	.27	.02	.19	.14	-.01	.15	.06	.05	-.00	.14	1

are assured of spiritual guidance, protection and immunity from accidents. Because these rituals are supposed to ward off danger and help devotees to cope with hazardous situations, the *false* sense of invincibility provokes one to ignore or downplay safety precautions leading to risk-taking behaviour, which increases accident susceptibility. Consistent with this argument are studies on drivers' behaviours in the West African country of Ivory Coast (Kouabenan, 1998) and South Africa (Peltzer & Renner, 2003). The observation was that drivers with Islamic and Traditional backgrounds displayed superstitious attitudes and a high degree of risk-taking behaviour, as they drove more recklessly, disregarded traffic signals which subsequently increased their vulnerability to accidents.

A major theoretical approach that may also account for the disparity in causality assignment could be deduced from Rotter's (1966) *Internal and External Locus of Control*: the dimension that describes the extent to which individuals believe that the outcomes of their actions are determined by either their actual behaviour or by events beyond their control. While workers affiliated with the Christian faith were internally oriented, their Muslim and Traditionalist counterparts were externally oriented. This explanation is plausible in view of the fact that the Muslims and Traditionalists were distinguished by causal attributions that implied a lack of control over events in the accident process. In their examination of 43 countries using the Rotter Scale, Smith, Trompenaars and Dugan (1995) observed how a cluster of largely Christian nations was concentrated along the internal dimension, while East Asian (Oriental) and other non-Christian nations clustered around the external dimension. Consistent with their findings, the conception of internality and externality observed in the current study may to some degree reflect the general attributions in many Christian and non-Christian communities.

A plausible rationale for the regular use of supernatural and sorcery explanations by the Traditionalists and workers with Islamist backgrounds could lie in the realm of defensive and rationalisation mechanisms. According to defensive attribution theory, witchcraft and sorcery attributions function primarily to satisfy people's need by buffering the psychological impact of negative and or uncontrollable life events (Shaffer, 1984). Because these supernatural forces and phenomena are considered to be awesomely powerful with dominion beyond human volitional control and domestication (De Latour, 1995), and are not subject to normal natural laws, and therefore beyond verifiable measurement, sorcery and witchcraft attributions exonerated the Traditionalist and Muslim accident perpetrators from responsibility and blame (Weiner, 1995).

Additionally, the observed causal explanations could have been made to restore meaningful belief systems after tragic workplace accidents. A particularly common remark noted during the fieldwork was that, *it was within Allah's will that this should happen; for if Allah had not willed it, it couldn't have happened*. Thus the accident victims devotedly considered their deprivation and lot as fair and

just as they and felt that they had not been unjustly victimised. By contrast, while Christians credit God for good fortune and success, they hardly blame God for their calamities and misfortunes (Hovemyr, 1998). As noted by Furnham & Brown (1992), Muslims and Jews, followed by Christians, are more likely to endorse theological explanations for misfortunes and sufferings. This approach to rationalisation is consistent with Lerner's (1980) *Just World Theory*: the belief that people get what they deserve, and deserve what they get. It not only helps such victims cope effectively with the psychological stress, but also provides an assurance that makes future catastrophic events endurable and manageable (Blaine et al., 1998; Pargement et al., 1992; Spilka et al., 1985).

### **Implications for Safety in the Work Environment**

The current findings have significant practical implications to workplace safety personnel and management, as the degree of workers' perceptions of control over workplace situations have great implications for safety-management policies (see DeJoy 1994). Workers with external orientations may be more likely to downplay the role of dispositional characteristics that implicate people in accident processes and may therefore not perceive themselves or their actions as crucial in maintaining safety in the work environment. Such an attitude might keep them from engaging in effective preventive practices, thereby endangering their lives and the lives of others. Safety officials might therefore need to pay extra attention to their need for behavioural modifications.

The main limitation relates to the sample composition. The participants were predominantly male. This is because men are more likely than women to engage in job roles that expose them to injuries and work hazards. The threat of an adverse impact on accident causal explanations from women's perspective is minimal, as men and women tend to display the same pattern of attributions (Robins et al., 1996). Notwithstanding, the current findings add to the body of studies that have established possible links between religious affiliation and social behaviour. Particularly, it is consistent with Spilka et al.'s (1985) attribution theory for the psychology of religion wherein three basic ambitions tend to underline devotee's attributions: a sense of meaning, control over future outcomes, and preservation of self-esteem. Within the Ghanaian context, it is consistent with Takyi's (2003) and Addai's (2000) observations of an association between religious affiliation and health-related behaviour. As this study is among the first in attempts to examine the impact of religious beliefs in organizational behaviours, additional investigations in this direction will be in order. Further comparative analyses involving workers with religious affiliations and those without any affiliation will be in the right direction.

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