



# The construction of social identity in newly recruited nuclear engineering staff: A longitudinal study



Lynda Nguyen<sup>\*</sup>, Glen Murphy, Artemis Chang

Queensland University of Technology, QUT Business School, 2 George Street, GPO Box 2434, Brisbane, Queensland 4001, Australia

## ARTICLE INFO

### Article history:

Received 15 June 2013

Received in revised form

13 May 2014

Accepted 17 May 2014

Available online 29 May 2014

### Keywords:

Social identity construction

Nuclear engineers

Safety cultures

New entrants

Deductive

Inductive

Norm internalization

## ABSTRACT

This study examines the process by which newly recruited nuclear engineering and technical staff came to understand, define, think, feel and behave within a distinct group that has a direct contribution to the organization's overall emphasis on a culture of reliability and system safety. In the field of organizational behavior the interactive model of social identity formation has been recently proposed to explain the process by which the internalization of shared norms and values occurs, an element critical in identity formation. Using this rich model of organizational behavior we analyzed multiple sources of data from nine new hires over a period of three years. This was done from the time they were employed to investigate the construction of social identity by new entrants entering into a complex organizational setting reflected in the context of a nuclear facility. Informed by our data analyses, we found support for the interactive model of social identity development and report the unexpected finding that a newly appointed member's age and level of experience appears to influence the manner in which they adapt, and assimilate into their surroundings. This study represents an important contribution to the safety and reliability literature as it provides a rich insight into the way newly recruited employees enact the process by which their identities are formed and hence act, particularly under conditions of duress or significant organizational disruption in complex organizational settings.

© 2014 Elsevier Ltd. All rights reserved.

## 1. Introduction

A number of crises over the years have highlighted the importance of managing and maintaining an effective safety culture in the nuclear industry [1]. The 1979 Three Mile Island Nuclear Station incident was considered to be the most serious incident in U.S. nuclear power plant operating history. Inquiries into the accident revealed critical problems involving hardware, procedures, employee training, and operators' attitudes toward safety, regulation and compliance compounded the event [2]. Shortly in 1986, the Chernobyl accident in the Ukrainian Soviet Socialist Republic further emphasized the risks associated with nuclear production and is largely credited for being the catalyst for the notion of "safety cultures". More recently, in March 2011, the Fukushima Daiichi nuclear plant were badly damaged after earthquake and ensuing tsunami knocked out cooling systems to reactors which led to meltdowns and the release of radioactivity [3]. However in a following Japanese parliamentary investigation, the panel stated that the crisis was "a profoundly man-made disaster" and "could and should have been foreseen and prevented" and its effects "mitigated by a more effective human response" [1]. Significantly, the report directed

liability at both the government and plant operators, and specifically blamed the organizations and operators' staunch cultural conventions in terms of its reluctance to question authority and assert control. A common pattern in all three cases is that over time, deviations from an optimal process became evident that were shaped by shifts in the cultural and social norms of the plant [4]. Had these cultural and normative deviations been identified and resolved, it may have reduced or eliminated the level of damage on humans, business and the environment [3,5]. The sequence of actions documented in all these events can be traced to the shared and internalized cultural norms of the organization and the work-group—often referred to collectively as organizational culture [4].

Organizational culture is defined as a set of basic assumptions about the functioning of an organization shared by the majority of employees that drive their perceptions, attitudes, feelings, and behaviors [6]. The Institute of Nuclear Power Operations defines safety culture as "an organization's values and behaviors—modeled by its leaders and internalized by its members—that serve to make nuclear safety the overriding priority" [4]. Tacitly assumed in this definition is the golden thread that runs along the spectrum of roles and position to connect into a collective and cohesive understanding and operation of a safe organizational culture [7]. In a review of engineering cultures, Murphy [8] emphasizes the multi-faceted nature of the construct, noting the complexity of the phenomenon due to its social construction, historical legacies,

<sup>\*</sup> Corresponding author.

E-mail addresses: [lynda.nguyen01@gmail.com](mailto:lynda.nguyen01@gmail.com) (L. Nguyen), [gd.murphy@qut.edu.au](mailto:gd.murphy@qut.edu.au) (G. Murphy), [a2.chang@qut.edu.au](mailto:a2.chang@qut.edu.au) (A. Chang).

systematic and institutional factors that drive espoused attitudes and behaviors. In particular the high reliability organization (HRO) literature approach to issues concerning safety and reliability is often explicit in its position that culture is a product of shared beliefs and expectations [9].

Aligned with the notion that culture is an important driver of behavior within complex organizations, socialization has been also recognized as a key element in the performance of engineering and technical personnel. For example, Kowtha's [10] work demonstrated that socialization tactics strongly influence role clarity and work-group integration as well as increased reported job satisfaction and commitment. However while their work investigates the impact of gender on engineer adjustment it, like many other studies since have not fully examined the manner in which new technical staff develop their social identity during that initial socialization period. Others such as Roberts, Rousseau and La Porte [11] have noted in their extensive empirical investigations that personalities and their ability to operate both independently and inter-dependently within highly regulated and high pressure environments are critical for the ongoing success of the operation.

Therefore while organizational culture as a construct is typically aggregated at a macrolevel of analysis, the demonstration and enactment of a safe culture essentially begins with the individual employee [12] which highlights the importance of how they internalize these values as they enter as new entrants into the organization and their workgroup. In short, an organizational culture is an aggregate of the attitudes, values and espoused behaviors of the entire workforce and is therefore by definition dynamic in that if allowed the transitional nature of a workforce can alter over time the nature of that shared belief. Wooldridge and Minsky [13] make the critical link between the socialization of employees, organizational cultures and inter-functional coordination. They argue strongly for the role of socialization in reinforcing core values that ultimately allow the organization to better coordinate their operations in response to external stimuli. The internalization of norms is a psychological process and describes the embedding of characteristics and descriptions into the employee's perception. This in turn becomes part of their self-concept and defines their social identity within that context. Social identity is traditionally defined as "the individual's knowledge that he [sic] belongs to certain social groups together with the emotional and value significance to him [sic] of the group membership" [14]. In the context of an organization such as a nuclear plant, social identity can be seen to have significant implications in terms of acceptance and trust between team members, acknowledgment of the need for process compliance, awareness of role and contribution and the espoused behaviors in response to various organizational stimuli.

The study reported here was concerned with how new entrants internalize the cultural and social norms upon entering a nuclear establishment. Our principle aim was to better understand how newly recruited employees' attitudes and behaviors either impacted on, or were influenced by the context they were entering. Specifically, our study intended to investigate, with rich data the process in which new nuclear engineering staff come to understand, define, think, feel and behave within a distinct group as well as becoming aware of their membership to a "collective" and perceiving that as a unique entity [15] which would then shape the content of their collective organizational culture.

1.1. The interactive model of social identity

Postmes et al. [15] recently proposed that social identity formation occurs through the interdependent role of deductive and inductive internalization of group norms and values [16]. As displayed in Fig. 1, the deductive or "group driven" route refers to individuals inferring

identity from the broader social context, based on "a top-down process of identity and norm formation on the basis of understanding from supra-ordinate social "realities" existing in the social structure" [16]. Put simply, people primarily take their cues about how to act and behave from those around them. Intrinsic to this route is that social identity is constructed through the recognition and sharing of unique common characteristics at a group level, embedded within a given social context. For instance, nuclear plant employees are likely to deduce part of their identity from the safe rigid work practices, clear line of authority and tacit operating expertise, which act to facilitate group behavior whilst at the same time drawing boundaries around what is acceptable and tolerated.

Alternatively, the inductive or "individual driven" route is the reverse: a bottom-up approach whereby the role of the individual and their contribution to the development of identity in the group is emphasized. Again, in a practical sense this means that an individual is able to impose their core values, attitudes and perspectives on the group, and in doing so has the strong likelihood of altering the existing norms and values of the workgroup they are part of. Depicted in Fig. 2 the "bottom-up" process is argued to be actualized through communication and steered

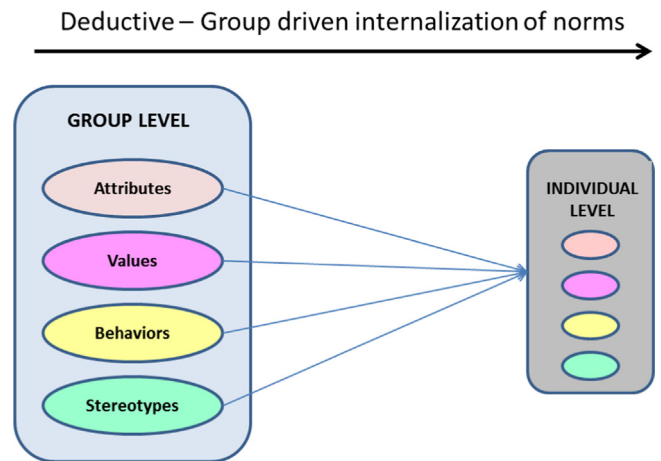


Fig. 1. Deductive or group driven internalization adapted from Postmes et al.'s [16] interactive model of social identity formation.

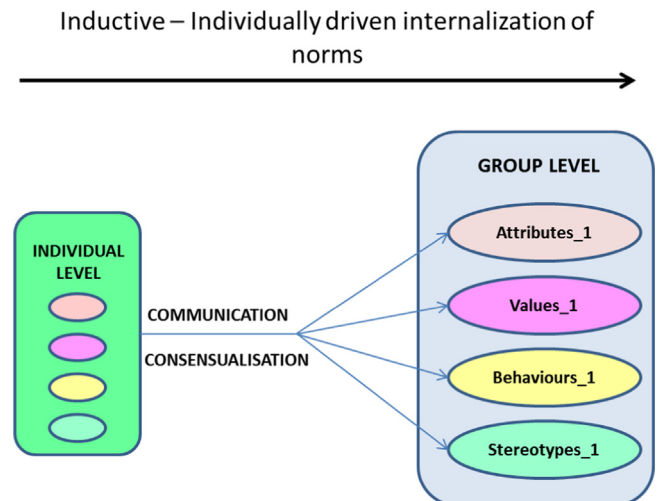


Fig. 2. Inductive or individually driven internalization adapted from Postmes et al.'s [16] interactive model of social identity formation.

Download English Version:

<https://daneshyari.com/en/article/806760>

Download Persian Version:

<https://daneshyari.com/article/806760>

[Daneshyari.com](https://daneshyari.com)