

# Making Sense of Non-compliance: A Semiotic Approach

Kwasi Dankwa<sup>(✉)</sup> and Keiichi Nakata

Henley Business School, Informatics Research Centre,  
University of Reading, Reading, UK

k.d.dankwa@pgr.reading.ac.uk, k.nakata@henley.ac.uk

**Abstract.** Compliance is an important aspect of operational requirements, and is essential to have a system that allows for compliance to be monitored, managed and improved. However, why non-compliance occurs in organisations is not always well understood. This paper proposes that the semiotic approach can aid in making sense of non-compliance behaviour by analysis of the actions of the agents. In particular, the organisational containment analysis highlights the division between informal and formal treatment of compliance. It also indicates that the established norms which are as a result of rules, regulations, beliefs and other patterns can influence behaviour. The paper proposes that these norms and patterns constitute the culture and beliefs of the organisation and determines how the agents embrace rules and regulations. An example of analysing compliance using the semiotic approach is presented using a case study of non-compliance to the quality management system at NHS Blood and Transplant (NHSBT).

**Keywords:** Compliance · Norms · Semiotics · Non-compliance · Agents · Behaviour

## 1 Introduction

Compliance is central to the operations of organisations and its relevance cannot be over emphasised. It is an important component that can influence the behaviour of agents [1], and impact on output of the organisation. The need for compliance may be as means of ensuring safety of consumers, quality of products or as a legal requirement. It is seen as the means of ensuring conformance to a rule: such as a specification, policy, standard or law [2]. According to O'Neill [3], compliance is initiated by three main steps. 'First the societal imposition of rules and regulations; second, the organisation's decision to abide by the regulation and defines internal responsibility; and third, the act of implementing and managing the regulatory processes within the organisation to address the societal requirements'. To allow for this, the standards and regulations are well defined and act as means of measurement or audit of deviation within the organisation. Thus compliance describes the efforts organisations go through to ensure that they are aware of and take steps to comply with relevant laws and

regulations. According to Governatori [4], regulatory compliance is the set of activities an organisation does to ensure that its core business does not violate relevant regulations which allows the organisation to thrive.

As a result of the increasing number of regulations to allow for operational transparency, organisations are increasingly adopting the use of consolidated and harmonised sets of compliance controls [2]. Furthermore, the culture within many organisations has been changed to essentially promote climate which fosters the attitude to compliance matters [5]. However, although many organisations may have systems in place to control compliance, there are instances where compliance to regulatory standards are not met. This has been shown to be apparent across different sectors; aviation, nuclear industries, banking, processing, health and manufacturing [6, 7]. Evidently, these failures indicate that the current systems to manage compliance are not working and there is the need for further investigation.

## 2 Background

The motivation for this research derives from cases of non-compliance to the Quality Management Systems (QMS) at NHS (National Health Service) Blood and Transplant (NHSBT). The NHSBT collects blood and organs from voluntary donors to meet the demands of patients. To support these activities, it is essential that work is done within an efficient and effective QMS. Although QMS is in place, there have been reported instances of non-compliances. Examples include: (a) Failure to supply specially matched product with resultant delay in treatment; (b) Failure to correctly label product leading to delay in treatment; and (c) selection of wrong donor leading to delay in stem cell collection. These instances of non-compliance have been shown to occur across different departments and involves different staff grades within the organisation with their effects ranging from impact on treatment and reputational impact on the organisation. The non-compliances have been reported across the NHS.

A 2014 report by the Medicines and Healthcare products Regulatory Agency (MHRA) indicated that the number of Serious Adverse Events (SAEs) reported across NHS shows an increase of 8 % (705/766) from 2013 [8]. The cases of non-compliance indicate that although organisations have systems in place to manage compliance, there are still reported failures. These have led to a number of research across sectors such as the health, manufacturing, banking, aviation, food etc., to improve compliance [3, 6, 7]. Although there have been improvement, there are still some gaps in knowledge when it comes to understanding non-compliance behaviour. In view of this, the research reported in this paper seeks to address the following research problems:

- What are the reasons behind non-compliance within organisations?
- How can compliance to rules, standards and regulations be improved within the organisation in light of understanding the reasons behind non-compliance?

The next section reviews existing researches related to compliance to ascertain the current understanding of (non)compliance behaviour.

### 3 Compliance Behaviour

The review of literature shows that compliance is an important component required for organisations to thrive. It is therefore not surprising that measuring the level of compliance has emerged as a key performance indicator. As such, organisations have developed compliance performance indicators to facilitate analysis of compliance activities and its enforcement trends [9]. Importantly, compliance culture within organisations have been shown to be vital to meet regulatory requirements to address customer needs in the competitive global market. This led to strategic plans to improve compliance culture and to encourage staff to align their values with the values of the organisation. Understanding compliance culture across organisations is important to understand compliance behaviour.

#### 3.1 Compliance Cultures

The culture within different organisations may differ depending on the sector and how they perceive compliance issues. According to Jenkinson [5], a compliance culture is essentially the climate which fosters the attitude to compliance matters.

Compliance culture within organisations can be grouped into three main types [5] as non-compliance, anti-compliance and pro-compliance cultures. In non-compliance culture, compliance rules are frequently breached by the organisation with no recognition of the need for compliance. This is more accepting to increase profits [10]. With anti-compliance, compliance is generally seen as a threat and is merely tolerated. There is high risk of breach as compliance is seen as a reactive approach to the standards. Finally, in the pro-compliance culture, the organisation is inherently compliant and all the activities are compliantly performed. This view of categorization of different types of compliance culture is also shared by [11] who split organisations between those that view compliance and risk management as an opportunity for continuous improvement and those that simply see it as a tick box exercise to satisfy periodic audit requirements. This shows that the culture within the organisation can relate to the way the agents perceives the rules and regulations. This can be useful when assessing the compliance behaviour as the culture within the organisation may determine how they comply. There may therefore be a link between the compliance cultures of the compliance behaviour of the staff.

#### 3.2 Compliance Culture Across Different Sectors

Many international institutions and conventions share a common aim of establishing and strengthening authorities to deliver effective compliance programs and enforcement [9]. Such institutions try to promote effective ways of ensuring essential compliance culture that strengthens the compliance levels within organisations. This makes understanding compliance across different sectors useful.

In conservation [1], compliance is critical to the success of any conservation project, regardless of the scale of the conservation actions or the means of conservation

governance. It is not different in the food supply chain as is critical to ensure safety of the supply chain [10]. It is seen as a critical factor in the safety of products and services. Also, in the education sector, QMS for teaching and learning have been developed for the purpose of quality assurance for example to monitor theses of Ph.D. students to ensure completion on time [12]. The health care sector is no exception as researches have been conducted from drug compliance to information governance of medical information. According to Cramer et al. [13], studies have demonstrated that inadequate compliance and non-persistence with prescribed medication regimens result in increased morbidity and mortality. These are not the only sectors that require compliance as many industries such as nuclear, aviation and chemical, see it as very important for the desired outcome to be achieved [6].

However, although there is enough evidence to demonstrate that organisations strive for compliance, there are still gaps in the literature in respect of systems and frameworks to assist organisations in managing compliance [3]. This is supported by [14] who indicated that there are still gaps between staff compliance behaviour to standards of practice. Moreover, despite many actions and systems, inadequate compliance is frequently observed [9]. These systems and actions; Compliance Action Framework, Analytical Framework and ICT Approach as applied by [3, 4, 13] in dealing with compliance, have mainly focused on addressing the symptoms but fail to understand the reasons behind the non-compliances. There is therefore the need to have a system or approach that allows for the behaviour of the agents to be analysed to understand and make sense of the non-compliance behaviour. The semiotic approach which allows for the analysis of behaviour based on the interpretation of signs within the organisation and the norm analysis of the agents lends itself to the understanding of non-compliance behaviours. The next section analysis the semiotic approach and how it can be used to understand and to make sense of non-compliance behaviour.

## 4 Semiotic Analysis

### 4.1 Conceptual Background

Semiotics is ‘the study of signs’, and is concerned with their creation, representation and interpretation. Peirce (1958) defined a sign ‘as something which stands to somebody for something in some respect or capacity’. Peirce’s concept of a sign involves three parts: the Representamen (the sign), the Object (which is signified by the Representamen) and the Interpretant (that links the Representamen to the Object).

Within the organisation, every setting and sign presents the potential for training, development and for relaying information between stakeholders. A significant but often overlooked resource is the everyday experience of interacting with the infrastructures (building, equipment, and procedures) and communication structures that are available within the organisation [15]. These structures represent cultural values and the beliefs of the organisation which influences the operations within the organisation. It is therefore useful to understand these elements and to make sense of them. According to [15], a semiotic interpretive approach allows for critique in the ways cultural structures help to understand the ideas and the values that binds the people within the

organisation. Essentially, the semiotic approach can be applied in the analysis and understanding of non-compliance behaviour as it embraces culture.

### 4.2 Application of Organisational Containment Model

To understand non-compliance behaviour, an Organisational Semiotics (OS) perspective [16] is used. This allows for an organisation to be seen as an information system with interdependent links between the organisation, the business process and the IT system [16]. These links can be expressed as an organisational containment model [19] that models organisation as comprising three systems – informal, formal and automated (technical) – whereby the automated system is contained within the formal system which in turn is contained within the informal system. This means that changes in any of the systems may have impact in other systems. Typically the informal system is the organisation itself. Figure 1 illustrates the organisational containment with the three systems and how they interact with each other.

The informal system is a sub-culture where meanings and beliefs are established and intentions confirmed. At this level, the cohesive relationship between individuals are built and commitments are formed. However, at the formal system, there is formation of rules and procedures and individuals are made to follow bureaucratic rules which is in contrast to the informal system. The automated system is part of the formal system which is automated, for example, by a computer-based system [16]. In the problem addressed in this paper, we focus on informal and formal systems as there is no automated system involved.

Because the organisation is seen as a social system in which people behave in a manner that conforms to certain norms, compliance analysis can be assessed using the organisational containment model. The norms may be as a result of rules, regulations, beliefs and other patterns which have been established over a period of time through practical experience [16]. They have been shown as the rules which determine how social organisms interact and controls their ability to perform actions [17]. They have the ability of directing, coordinating and controlling the actions of the agents. Norm has been described as a field of force that coerces the people in the community to think in a certain manner [18]. Essentially, the agents within the organisation may act as a result of existing interactions between the systems and experience established over the years.

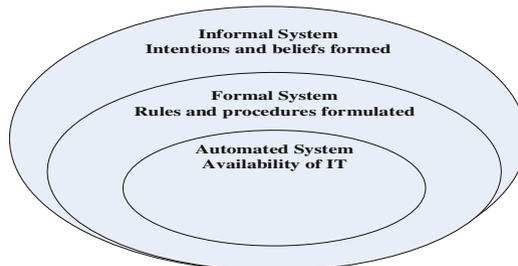


Fig. 1. The organisational containment model [19]

By introducing the formal system, there is move towards automation of the system where the agents in the organisation work without understanding the meaning behind what they do. This is evident in NHSBT where there are rules and procedures as part of the QMS to guide the performance of task within the departments. This formal system replaces the meaning and the intention that existed at the informal system and this can lead to conflict between the two systems. This conflict can lead to staff detachment as they only efficiently perform their task due to the formal system but are not satisfied because of the decline in the meaning and commitment that existed in the informal system.

Shapiro [15] indicates that culture has two aspects: the known meanings and directions which members are trained to and the observed meanings which are offered and tested. In essence, the agent may follow a norm conforming action or norm-breaking action although they have been trained and have knowledge of the rules and regulations. The agents may prefer to act in line with the norms in place to fit in due to the measure of patterns of behaviour set by the norms. This may be done depending on the prevailing situation at the time of the action. Consequently, an individual in a community who has learned the norms will be able to use the knowledge to guide their actions. However, the actions performed is invoked by different norms which may be irrelevant of the outcome. This is because norms selected are subjective and may not have predetermined connection to a particular outcome. In performing their task, agents may not think of the consequence of their actions as they invoke the norms they deem appropriate at the time. This may either be compliant or non-compliant behaviour to the procedures and rules that exist in the organisation. This analysis shows that the understanding of interaction between informal and formal systems is useful in making sense of non-compliance behaviour. The next section will analyse how analysing the norms can contribute to understanding of non-compliance behaviour.

## 5 Analysing Compliance Through Norms

### 5.1 Culture of Compliance

For NHSBT to meet customer needs, performance of task in the departments requires a shared understanding of norms and culture among staff within the organisation. In semiotic terms, the interpretation of various signs that are used and exchanged among the staff is influenced by the experience, knowledge and the beliefs of the staff in the various departments. Although the culture within NHSBT is pro-compliance, there appears to be departmental differences when it comes to compliance with the rules and procedures. This is because there is sub-culture that exists in the department which tends to influence the behaviour of the staff. The established norms within the departments influences the way the staff in the departments perceive the rules and procedures. Review and discussion with the QA department about compliance to QMS revealed different non-compliances across different departments.

Let us analyse one of the cases at NHSBT where there was a failure to supply specially matched product. Although the staff received the correct order from the hospital, the wrong product was produced. This is because, in selecting the initial

material, the staff failed to check that the correct material had been selected as per the procedure. Moreover, although there was requirement in the procedure to check the order against the selected material in the manufacturing department, this did not happen. There appeared to be an incorrect understanding and belief that existed between the staff which influenced the observed behaviour in this case. Consequently, the established meanings and beliefs in conflict with the formal system resulted in the non-compliant behaviour. The wrong product selected resulted in a conflict between the formal and informal system. The informal system, which tolerated the non-compliance behaviour, was considered as the established norm in the department which influenced the behaviour of the staff as evident in this non-compliant behaviour. The informal system which is the organisation itself contains the intentions, norms and beliefs which influences the behaviour of the agents.

## 5.2 Norm Analysis in Compliance

Norm analysis aids understanding of the agents' behaviour in the organisation. This helps to capture the details of norms enacted by the agents and authorities who are responsible for the norms and the triggers which cause the norm to come into effect. In the case above, the staff involved in dealing with the orders were aware of the procedures and rules in place but failed to comply due to established beliefs and norms. Five norms, namely, perceptual norms, cognitive norms, evaluative norms, behavioural norms and denotative norms [16], have been considered to control human behaviour and, in turn, organisational behaviour.

The perceptual norms influence how people react to signals from their environment through their senses. Here, the norms and values are embedded in the physical structures which influences the behaviour of the staff in the department. When the order was received, the staff might have been selective in terms of what aspects of the order to be recognised, which may have influenced the behaviour of the staff. The cognitive norms enabled the staff to interpret what they perceived based on the beliefs and knowledge. The staff interpreted the order based on the belief and knowledge that existed which may have led to the non-compliance behaviour. Although there is established rules and procedures, the acquired knowledge and beliefs coerced each staff differently to interpret the procedures. As such compliance in the organisation may be different across departments depending on experience of staff. In the analysis, the Evaluative norms aid in explaining the beliefs, values and objectives in the departments within the organisation. This helped in explaining the behaviour of the staff due to the understanding of the relationship between the formal and informal system. The behavioural norms govern the behaviour of the staff within the departments. These behaviours are as a result of the norms that exist within the department and this influenced the non-compliant behaviour observed. The knowledge, beliefs, values and the objectives that has been established within the departments controlled the behaviour of the staff in performing their actions. Finally, the denotative norms direct the choices of signs for signifying. These are culture dependant and may influence performance of task by staff within the department. This may have influenced the choice of flow of the process between the staff that received the order and the staff that manufactured the product.

Evidently, the behaviour of the staff is impacted by these norms which influenced non-compliance behaviour. In applying this to the case above, the staff involved in the process used one or a combination of the norms to complete the task. The performance of the task was initiated by staff who have the responsibility to select the initial material. The staff may have perceived or analysed the process differently to the required procedure leading to the failure to capture the required information from the order. Subsequently, staff in the chain of process also interpreted the task based on the established knowledge and beliefs culminating in the issue of non-compliant product. This is because, in the organisation the responsibility is determined by the established common agreements or policies. This leads to formation of 'life cycle' of responsibility which determines the role of each staff in the process. Non-compliance at this level was as a result of combination of one or more factors in the 'life cycle' of responsibility between all the stakeholders. This was due to persistent failures on the part of all the stakeholders who failed to check the requirements as a result of established beliefs and commitments.

The appropriateness of the responsibility of staff is influenced by the established norms which can either lead to compliance or non-compliance. In this case, the initiator of the 'life cycle' of responsibility was perceived as being compliant, so the process was carried out by subsequent staff without questioning, leading to non-compliance. On the other hand, if there was indication that the actions of the initiator of the process was not in line with the established norms, subsequent staff may have challenged their action leading to compliant outcome. Despite staff awareness of the procedures and rules, the established norms influenced staff in non-compliance behaviour. Moreover, because there is reliance on the interpretation of the request, the outcome depends on the skill set, the knowledge and the beliefs. At each stage of the process, there is the tendency for one or more agents to make a non-compliant decision based on how they perceived or interpreted the sign. There is indication that the established norms and beliefs influenced the behaviour of staff and by using the semiotic approach we can make sense of the non-compliant behaviour.

## **6 Discussion**

### **6.1 Suitability and Benefit of Semiotic Approach**

The Semiotic approach allowed for consideration of all the sign structures that exist within the organisation to be analysed and the impact on staff behaviour to be noted. Using the organisational containment analysis, the discrepancies between the formal and informal processes can be ascertained. Essentially, by understanding the conflict between the formal and the informal systems, improved procedures and rules can be formulated to guide activities within the organisation. The analysis allowed for sequential process to be followed to make sense of the reasons behind non-compliance. This also allowed for analysis of the actions performed by the various agents within the responsibility 'life cycle' which can be useful in dealing with non-compliance behaviours.

## 6.2 Limitations of Semiotic Approach

Although the analysis allowed for the investigation and understanding of non-compliance behaviour, the subjective nature of the analysis makes it difficult to generalise. Also the number of case studies used in this review limits the generalisation of this paper. The interpretation of signs within the organisation may differ depending on the experience, education, knowledge, beliefs, etc. of the staff who are involved in the process. In the case analysed, although it was evident that staff failed to follow the procedure, it is difficult to generalise that all the staff in the department will not be compliant due to the subjective nature of application of norms. Moreover, the perception of one staff member may be different from others and as such the outcome of their interaction with the procedures may be different at any given time which makes generalisation of findings difficult and problematic. Furthermore, although the semiotic approach allows for sense to be made of non-compliance behaviour, to allow for validity of the studies other analytical lens may be useful in future work.

## 7 Conclusion

Compliance has been shown to be an important aspect of the operations in organisations. Based on the concepts in organisational semiotics, in this paper, failures of compliance to rules, regulations and procedures are attributed to failure by agents to appropriately interpret and invoke the norms when required. The use of semiotic analysis has indicated that the established norms and beliefs in the organisation influences the actions taken to complete the task as noted. Moreover, subcultures within the departments have been shown to play a role in compliance behaviour. Furthermore, the organisational containment analysis points to possible discrepancies between the informal and formal systems that exist within the organisation. This influences how agents comply with rules, procedures and regulations and can influence compliance behaviour. Moreover, the actions of the agent that initiates the process have been shown to influence application of task by subsequent staff and this can impact on compliance behaviour. By establishing a culture that supports staff for compliance, there is indication that the appropriate actions may be compliantly performed routinely. Semiotic approach can aid in making sense of non-compliance behaviour in organisations.

In future work, a further analysis of compliance culture and non-compliance behaviour will be applied to develop a framework for enhancing compliance and monitoring non-compliance in organisations.

**Acknowledgments.** The authors would like to thank the Quality Assurance Department at NHSBT for their cooperation in this research.

## References

1. Solomon, J.N., Gavin, M.C., Gore, M.L.: Detecting and understanding non-compliance with conservation rules. *Biol. Conserv.* **6**, 2013–2016 (2015)
2. Silveira, P., Rodriguez, C., Birukou, A., Casati, F., Daniel, F., D’Andrea, V., Worledge, C., Zouhair, T.: *Aiding Compliance Governance in Service-Based Business Processes*, pp. 524–548. IGI Global, Hershey (2012)
3. O’Neill, A.: An action framework for compliance and governance. *Clin. Gov. Int. J.* **19**(4), 342–359 (2014)
4. Governatori, G.: ICT support for regulatory compliance of business processes. In: *Proceedings of 29th World Continuous Auditing and Reporting Symposium (29WCARS)*, 21–22 November 2013, Brisbane, Australia (2014)
5. Jenkinson, D.: Compliance culture. *J. Financ. Regul. Compliance* **4**(1), 41–46 (1996)
6. Park, J., Jung, W.: The operators’ non-compliance behaviour to conduct emergency operating procedures - comparing with the work experience and the complexity of procedural steps. *Reliab. Eng. Syst. Saf.* **82**(2), 115–131 (2003)
7. Richard, L.H.-Y., Mande, V.: Factors influencing non-compliance with ASU 2010-06 in the banking industry. *Manag. Audit. J.* **29**(6), 548–574 (2014)
8. Birse, M.: *Blood Consultative Committee New Letter*. MHRA, London (2015)
9. Read, A.D., West, R.J., Kelaher, B.P.: Using compliance data to improve marine protected area management. *Mar. Policy* **60**, 119–127 (2015)
10. Hirschauer, N., Bavorova, M., Martino, G.: An analytical framework for a behavioural analysis of non-compliance in food supply chains. *Brit. Food J.* **114**(9), 1212–1227 (2012)
11. Hillson, D., Murray-Webster, R.: *Understanding and Managing Risk Attitude*, pp. 1–6. Gower Publishing, Surry (2004)
12. Daud, S., Mustafa, Z., Mohd Suradi, N.R., Ariffin, A.K., Abu Bakar, N.R., Ramli, R.: Compliance to thesis examination procedure in the ISO quality management system for teaching and learning. *Procedia – Soc. Behav. Sci.* **18**, 18–23 (2011)
13. Cramer, J.A., Roy, A., Burrell, A., Fairchild, C.J., Fuldeore, M.J., Ollendorf, D.A., Wong, P. K.: Medication compliance and persistence: terminology and definitions. *Value in Health: J. Int. Soc. Pharmacoecon. Outcomes Res.* **11**(1), 44–47 (2008)
14. Shah, N., Castro-Sánchez, E., Charani, E., Drumright, L.N., Holmes, A.H.: Towards changing healthcare workers’ behaviour: a qualitative study exploring non-compliance through appraisals of infection prevention and control practices. *J. Hosp. Infect.* **90**, 126–134 (2015)
15. Shapiro, B.: Structures that teach: using a semiotic framework to study the environmental messages of learning settings. *Eco-Thinking* **3**(1), 3–15 (2012)
16. Liu, K.: *Semiotics in Information Systems Engineering*. Cambridge University Press, Cambridge (2000)
17. Salter, A., Liu, K.: *Using semantic analysis and norm analysis to model organisations* (1985)
18. Stamper, R., Liu, K., Hafkamp, M., Ades, Y.: Understanding the roles of signs and norms in organisations. *Behav. Inf. Technol.* **19**(1), 15–27 (2000)
19. Stamper, R.K.: Language and computer in organised behaviour. In: Riet, R., Meersman, R. (eds.) *Linguistic Instruments in Knowledge Engineering*, pp. 143–163. Elsevier Science, New York (1992)