RESEARCH ARTICLE

Organisational Framing Within the Health Context: a tool kit for adoption – Part 1

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Abstract

Purpose

Health service organisations are extremely complex and undergo almost continual change. However, many managers are restricted in their ability to undertake effective change by the mental models they currently hold. This paper considers whether using framing analysis and reframing techniques enables health managers to see organisations and problems in more complex and alternative ways, leading to better problem solving and decision-making.

Methodology/Approach

This paper is based upon participant observations undertaken during a study into the development of professional identities in doctors and nurses. The data led to the development of substantive level theory and

recommendations for practice based upon the work of Bolman and Deal. [1] The context is within one state jurisdiction of the Australian health system.

Findings

The majority of respondents naturally used the structural frame for their analysis which limited the possibility of creativity and innovation within the decision-making process.

Originality/Value

The application of reframing is posited as a way to improve decision-making and problem-solving.

Key words: healthcare; health systems; mental models; reframing; change; problem-solving.

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Introduction

Complexity, surprise and ambiguity make organisations hard to understand and manage. [2] This is amplified because most people see the world relatively narrowly – relying on old habits and established ways of thinking framed by their current mental models of the world. [3, 4] Such mental models lead to a reliance on one perspective of the world and repeatedly using one or two solutions to problems. [5, 6] This blocks learning and creativity and limits the real potential

for change (see Figure 1). In Figure 1 it can be seen that new ideas may be prevented from entering organisations owing to doubting, which occurs because of uncertainty regarding the source, the veracity or the cohesion of the new ideas.

Consequently, such doubting can lead to a potential closure of the organisation or individuals to new ideas. The problem is how to maintain greater openness or even to develop openness once partial closure has occurred. Framing is posited by some as a way of enabling such openness because it will force an investigation of options and new ideas, even where habits have developed of looking at the world in one specific way, and have led to a prevention of alternates being considered. The argument is that, traditionally, managers look at the world in only one way or through one 'frame', where they try to solve all problems with logic, control and structure and seek to avoid complexity:

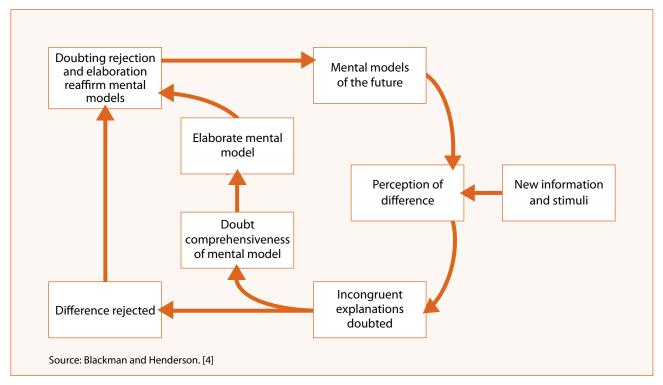


Figure 1: A figure of single loop doubting

One of the most basic problems of modern management is that the mechanical way of thinking is so ingrained in our everyday conception of organisations that it is often difficult to organise in any other way. [7, p.6]

By adopting one frame, managers are effectively limiting their ability to diagnose the causes of problems and failing to consider alternate possibilities or solutions. It can be posited that if managers undertook the 'reframing' of a problem by using other 'frames' to view the situation, they would recognise that there is no 'one best way' for any problem. [1, 7, 8, 9] This change of perspective should facilitate the use of a contingency approach giving more possible solutions and enabling greater creativity. Increased innovation and creativity are recognised as being vital to organisations as they will enable a greater range of knowledge to be developed and implemented, [10, 11] which is widely accepted as being a major source of both competitive advantage [12, 13] and innovative problem-solving. [14, 15]

There is a similarity in this with the use of metaphorical analysis. Metaphor is defined as the substitution of one idea or object by another, in order to assist expression or understanding. [16] Parallels are drawn between concepts in order to explain and clarify ideas. Consequently, metaphors are considered to be a cognitive lens (and, therefore, similar to a frame) which enables an individual to make sense of the situations being studied:

Within an organisation, metaphors can provide a crucial, dynamic contribution as a creative iterative tool that facilitates understanding ... Metaphors build off existing knowledge by connecting images, and then relating these images to both social and organisational events and realities. [17, p.26]

The use of a metaphor provides a conceptual framework which aids the revelation of significant events or aspects of organisational study and permits the creation of new creative possibilities, because abstract subject matter can be seen in a more concrete, familiar way. [18, 19, 20, 21]

Over time many metaphors have been suggested and used to clarify thinking about organisations: garbage cans, [22] jazz bands, [23, 24] soap bubbles, [25] families [26] and human entities, [27] not to mention those suggested by Morgan, [7] which include psychic prisons, machines and brains. In all cases, the idea is that the metaphoric thinking leads to new understandings which, in turn, lead to creative action. [20] The analysis is driven, for the most part, by an examination of data gathered within the organisation. [28]

Reading Morgan [7] provides indications that it would be useful to consider the same organisation from several different metaphors in order to gain multiple understandings. This leads us to the notion of managed re-framing, which takes different metaphorical lenses and asks managers to consciously consider the same phenomena from multiple perspectives. In this process managers address reasons why they prefer some ideas over others and, in some cases, instinctively reject some notions before they have actually been explored. The more complex the ideas involved, the more likely it is that managers will seek to clarify and simplify them in ways that will make them more manageable. [4] This makes it likely that, the more complex the situation, the greater the possibility of self-reflexivity developing, which will in turn reduce the potential strategies being considered and implemented.

In this paper we will, firstly, outline the nature of current health service organisations as complex environments. This analysis will then be used as the basis for an application of the Bolman and Deal frames. [1] Each frame can be seen to reflect certain metaphors: the symbolic frame is an application of metaphors such as the stage, drama and tribes; the structural frame looks at the organisation in terms of being a machine, a brain or system; the psychosocial frame looks at the world in terms of a collective, a community or a cohesive team; and the political frame uses metaphors such as a chess game, a battle field or survival. The differences which emerge from such analysis are used as evidence that the use of reframing can enhance the decision-making and problem-solving capacities of an organisation.

Health service organisations as complex environments

Modern health service organisations are extremely complex and undergo almost continual change. [29, 30, 31, 32] However, it is recognised that many change initiatives produce little effect [33, 34, 35] and often the change program can make things worse by placing increasing pressure upon managers and employees alike. This, in turn leads to more changes being implemented. [34, 36, 37] However, the complexity of modern health organisations means that events are increasingly hard to predict; the unexpected is to be expected and often there is considerable ambiguity to be found within any given situation. [2]

At the macro level, several forces behind the New South Wales (NSW) Health reform can be identified: these include the changing patterns of population redistribution, inefficiency of a regionalised structure and public sector reforms. [38] There are also significant differences in the complexity and level of healthcare between metropolitan and rural areas. Historically, these imbalances forced changes to the regionalisation structure in 1977, with the addition of another tier of 'areas' for administration

and planning purposes. [39] At this time, specific health management problems, such as the unsatisfactory health status of the Australian community, the fragmentation of services and the need for efficient utilisation of resources, were acknowledged. Further, Mackay [38] described the lack of hospital board control over an efficient use of hospital resources and doctor control over hospital expenditure as impediments to cost control. This launched the establishment of area boards and the development of an area health management model to ensure community participation in the management of resources, [38] changing the climate of the complex environment dramatically. This is still in operation today, albeit after several restructures. In addition, external environmental pressures on hospital managers include the constant demands for performance improvement, greater transparency and accountability. [40] Finally, as a result of public sector reforms in NSW in 1990, senior health executives are under public scrutiny via performance agreements, according to strict criteria. [38]

Under these conditions the application of a structural frame provides a quick and logical decision-making guide. However, viewing macro organisational change via the alternate symbolic frame and, for example, understanding the effects of change decisions on organisational tribes, decisions may then take different forms. Seeing that diverse organisational cultural groups (ie professional tribes) have developed differently, different tribes do not adjust or react to change in the same way. According to the symbolic frame, problems cannot be solved until contextual culture is fully understood. This means that a different approach may be required for each tribe. Whilst taking longer, the effect and outcome may be more successful, with less obstacles for implementation.

At the micro level, in addition to the constant restructuring of Area Health Services, healthcare managers have to deal with decision-making in a highly changeable environment. For example, patient conditions are continuously changing and new technology and innovation is being introduced seemingly ad infinitum. [41] This requires health managers to be highly adaptable in an unpredictable and ambiguous climate, characterised by a strongly defined hierarchical division of labour, with strong power tensions between professions (such as between doctors and nurses) and occupations (between managers and clinicians). [42] To make sense of this situation, it is no surprise that managers have resorted to a mindset that is conditioned to utilise routine and structured decision-making, contingency planning, and the creation of policies and procedures.

However, applying the alternate psychosocial frame will allow the consideration of flow on effects on individuals' and groups' (working) relationships and motivations to aid organisational progress. The psychosocial frame allows problems to be solved in ways that will develop the long-term commitment of all parties. Hence, fully understanding the personal sacrifices workers make to enable organisational change is important. Applying multi-framing may be more time consuming and complicated, but the investment of time is rewarding; for example, the retention of experienced staff and their organisational knowledge through an application of the psychosocial frame.

Rules, roles, goals, policies, the use of technology for control and dissemination of information as well as the utilisation of organisational structure to solve organisational problems, are fundamental aspects of the structural frame. [1] We posit that many public health managers have framed their decisions around such a structural lens, ignoring other frames that may be helpful to cope with the complexity faced on a daily basis. This is partly because of historical patterns of behaviour that are taught as a part of skills training; a reduction of ambiguity that is a core element of medicine and gets passed on to the way that decisions on other topics are made. Consequently, this paper considers whether using a framing analysis and reframing techniques will enable health managers to see their organisations and their problems in more complex and alternative ways, leading to better problem solving and decision-making outcomes.

Methodology

This paper is based on participant observations undertaken during a larger study into the development of professional identities in doctors and nurses. Ethical approval was granted by the Area Health Service as well as the university. Observations were conducted in an open environment, unconcealed and discussed with interviewees, who had volunteered and consented to be involved via purposive sampling and snow ball sampling. The sample involved 38 participants who were healthcare professionals and managers, with varying levels of responsibility but with resource allocation and strategic roles.

The researcher was also a manager in the organisation under study and researcher bias was therefore an issue. However, the researcher herself was interviewed by a fellow researcher to fully identify and reflect on the research frames in which she conducted her research. In addition, bias was

minimised by supervision from university members who had no experience in a hospital setting, nor any involvement with the organisation. Further, the research was presented at several academic fora, to seek ideas and advice that would assist with broadening the mindset under which the research was conducted. Moreover, bias was limited through a collaborative approach to analysis of observational data with the co-author of this paper.

The data led to the development of substantive level theory which sought to explain certain phenomena at a basic level which could then be tested and developed. [44] Observations took place within a healthcare environment during a 12 month period as a participant observer in a large metropolitan hospital in New South Wales, Australia. The objective of the study was to detail and understand the emergence of an additional professional identity for doctors, nurses and other healthcare workers; namely that of 'manager'. It was considered to be important for the effective research to track management behaviours and to analyse them in terms of their potential effectiveness. The researcher carefully noted copious observations of managerial decision-making in notebooks and transcribed these into memos. The episodes included decision-making practices around the use of resources, including human resources (eg allowing an additional team to do overtime), as well as decision-making around the use of capacity (eg scheduling cases in operating theatres and assisting the flow of patients from the recovery room to the Intensive Care Unit). Researcher observations included notes about using organisational rules and heuristics (references to rules of thumb) as well as the process of saliency of different stakeholders when making decisions.

As a part of this study, the instinctive first reaction that the participants took towards problem-solving and making decisions was also recorded. All interview data and observational notes were entered into a qualitative analysis software application (QSR NUDIST®) for coding and cross-coding. The findings were then analysed against the theoretical framework of Bolman and Deal (see Table 1). The Bolman and Deal framework was chosen for three reasons:

- it is widely used as a management text and could be clearly explained (see below);
- the range of frames enables clear comparisons and differences to be identified; and
- it is possible to identify specific behaviours and patterns which indicate the use of one or more frames.

Table 1: Description of Bolman and Deal's frames

FRAME	DESCRIPTION	
Symbolic	Focuses on values, attitudes and beliefs; it recognises the influence of national/social as well as corporate culture and sub-cultures on our thinking. According to the symbolic frame, problems cannot be solved until their cultural context is understood, as otherwise a proposed solution may merely be a surface solution or could even aggravate the situation.	
Structural	Emphasises rationality and advocates designing an organisation to fit with its environment, technology and strategy. Every organisation has a structure with its own organisational goals, divisions of work and coordination mechanisms which will influence leadership styles, communication and employee behaviour. The argument is that every problem can be solved by better processes, rules, systems and procedures.	
Psychosocial	The focus is on the different needs that people bring to their workplace; it looks at ways to obtain the best 'fit' between the needs of employees and the requirements of management and considers issues like job satisfaction, motivation and group dynamics. An assumption is made that if there is a mutuality of goals supporting the needs of all parties there will be greater motivation and, therefore, greater organisational productivity and success. Consequently, by understanding everyone's perspectives, problems can be solved in ways that will develop the long-term commitment of all parties.	
Political	Focuses upon the different interest groups that form within organisations and considers the different sources and uses of power. Political behaviour is considered to be the norm in organisations. It is recognised that conflict is a normal part of life in organisations, so that those using the frame must consider the implications this will have upon the reasons for problems and the potential solutions being proposed. Moreover, the notion that conflict is beneficial for developing creativity and that power is not always negative are a part of the political analysis.	

Source: Bolman L, Deal T. Reframing organizations. 3rd ed. San Francisco: Josey-Bass; 2003.

It was assumed as a part of the research that the most likely frame used by managers would be the structural frame which might potentially limit their ability to consider new and creative ideas. Decision-making or problem-solving incidents observed were analysed against the framework looking for evidence of the frames, using indicators described in Table 2 to identify the preferred frames of the healthcare managers.

Table 2: How to identify preferred frames

FRAME	CENTRAL CONCEPTS DISCUSSED	TYPES OF SOLUTION PREFERRED	FORM OF CONVERSATION
Symbolic	Culture, meaning, metaphor, ritual, ceremony, stories, heroes	Looks for the long-term ideas of how to change values and/or stories; looks to change individual behaviors through values and ideas	Why have people done this? What is the meaning of this? How is the history relevant? What do people value or believe?
Structural	Rules, roles, goals, policies, technology, environment	Process change, restructure, review rules, new rules and /or procedures	Around processes, looks for the root of the problem, ascribes faults
Psychosocial	Employee reactions, how to motivate, what will people like	Motivation for staff-development, rewards focused, outcomes oriented	How do people feel? What are the behaviours required or being rewarded?
Political	Power, conflict, competition, organisational politics	Changing balance of power, managing conflict, altering the status quo	If somebody wins, who is losing? What are the battle tactics?

Adapted from: Bolman L, Deal T. Reframing organizations. 3rd ed. San Francisco: Josey-Bass; 2003.

Findings

The primary finding was that healthcare managers, regardless of their background, be it nursing, medical or other, displayed a distinct way in which they analysed situations and made decisions. In most cases their analysis was predominantly from a structural frame, although other frames were used when the structural frame was challenged. For example, although policies and procedures were firmly in place, displayed and adhered to in this particular case study, in practice, clinical treatment is provided at the authority and sovereignty of individual medical clinicians.

Standardisation of practice may be a desired managerial goal (to allow for clarity, prediction of costs and safety), but the strongly anchored, bound and politically, largely unchallenged, medical professional identity prevents managers, including medical managers, prescribing how to undertake, and review, medical treatment and outcomes. However, whilst (medical) clinical matters appear to be out of reach of hospital managers, control over organisational decision-making is strongly reinforced by a structural frame. Nevertheless, it was also evident that aspects of all four frames could be found to matter for different decisions, although often they only emerged if the first solution was not accepted.

Structural frame

In the researched organisation, the research participants commonly used a structural frame to seek solutions to problems. When the system failed to deliver the expected goals (patient treatment figures for example), or where there were problems and uncertainty, the solution included a restructuring of the nature of the organisation and the jobs within it, as well as reforms in policy and procedures. When the system apparently fails, participants indicated that solutions are sought in areas of clinical governance, quality management and business process engineering.

Symbolic frame

When a symbolic frame was used, there was considerable focus upon the historical perspective and the way that things used to be done. In any discussion on how things are done now, there was also discussion about the past. Thus, the culture is bound by the history of the hospital, the way the doctors and nurses are trained, as well as the way that healthcare professionals are perceived by those using the service. Listening to comments and responses from doctors, it was clear that they liked to hang on to an apparently ideal world, which belonged to yesterday. There was often talk about a long affiliation with the hospital and the changes

that they had seen, which were couched in negative terms. Any decision to be made triggered a history of why this needed to occur and why either it would not have been done in the past, or it would have been better in the past in some way. This is one example of the impact of history. Other professional groups responded in different ways. Such responses may result in barriers to progress and lead to the formulation of rules which are likely to be trying to re-instate a previously sought after organisational state.

Further, observations indicated a wide range of symbols that can be seen within hospitals: corporate uniforms to clarify who does what; the status symbol of the stethoscope (historically only doctors carried them, now many other health professionals do), which may be seen as a symbol of expertise; the white coat of doctors to ensure everyone knows who they are and respects them accordingly. What also became apparent was that the different groups within the hospitals have different symbols and beliefs and, unless these were recognised, managing each group would be problematic. An earlier study into the construction of professional cultures of managers and clinicians in this same hospital revealed many differences between them. [43] These are summarised in Table 3 and suggest a changed approach is needed for the different professional identities.

Table 3: Difference between managers and clinicians

CLINICIANS (DOCTORS, NURSES

MANAGERS, NURSE MANAGERS AND OTHERS WHO ARE NOT MANAGERS) AND OTHER MANAGERS) • High sense of choice and low Low sense of choice and high sense of necessity, sense of necessity, working working at the hospital at the hospital • Believe resource allocation · Believe resource allocation should *not* be based on should be based on individual individual as determined as determined by clinicians by clinicians • Believe resource allocation Believe resource allocation issues have a place in clinical issues have no place in decision-making clinical decision-making Attach little value to their · Attach much value to their job security job security Attach little value to working Attach much value to working with friendly co-workers with friendly co-workers

Source: Fitzgerald JA. [43]

MANAGERS (MEDICAL

Generally, it is assumed that there is an overarching value which is that both managers and clinicians care for the patient. This may well be so, but what is seen as a benefit may vary widely depending upon the cultural perspective being taken by those analysing the case. Those who consider this frame will be more realistic about how the culture will support or prevent the implementation of new ideas within the health service.

Psychosocial frame

There are many elements of the decision-making process that reflect the psychosocial frame, such as pay awards, personnel rights, worker compensation issues and unionisation. However, analysis of the frame might show the reason why the psychosocial elements have developed the way they have. For example, the high emphasis upon structured unionisation is because the healthcare sector is trying to find motivational tools which can be applied as a set of rules for everybody. It is our proposal that an analysis within a psychosocial framework would show that, to be successful, a more chaotic and less prescriptive set of motivation and development tools would need to be adopted.

Political frame

There has been a history of strongly defined professional boundaries, which have led to political tension between doctors and nurses as well as those groups defined as clinicians and managers. Conflict is viewed as inevitable within the political frame. Interestingly, in recent years there have been changes in professional identity which are affecting the occupational boundaries and the division of labour. Examples of these are nurse triage systems and the introduction of hybrid managers, who have a dual role as both a manager and a clinician. In these cases, the decisions are made by doctors and nurses in very different roles with alternate goals, power bases and resources from those they previously experienced. These changes are leading to different forms of conflict, not necessarily less and, consequently, doctor and nurse managers need to be able to negotiate different solutions. Although on the surface the structural focus on rules provides some safety for professionals in new and alternate roles, changes in professional identity may enhance political role conflict, not reduce it. Managerial decision-making and clinical decision-making are two very different roles. Where nurses were historically subordinate to medical staff, managerially they are better educated and, supposedly, better equipped to make decisions. [41] Doctors are not necessarily seen as 'most knowledgeable' on managerial matters. Further, medical clinicians, who are also appointed to an organisational managerial role, are influencing the dynamics of the managerial decision.

What can be seen here is that important elements of all four frames are present in any decision to be taken within a healthcare context. By trying to solve all problems within a structural frame, it is likely that the actual complexity of the situation will not be recognised and the solution is unlikely to address the real problems present at the time. In order to increase the effectiveness of the long-term decision-making, all four frames may need to be considered in terms of both the problems being identified and the solutions being proffered. The next stage for the research will be to formulate a management development technique to support reframing.

Conclusion

We have demonstrated that it is possible for managers to become too set in their worldview and therefore unable to develop a creative and innovative range of solutions to organisational problems. We have established that there is a theoretical argument that the use of different frames, when undertaking decision-making and problem-solving, can initiate discussion about different and additional solutions than originally thought of.

We have used Bolman and Deal's framework [1] and established that the majority of healthcare managers instinctively use the structural frame when making decisions and developing strategies within a healthcare context. Other or additional frames are only discussed if there is some form of challenge to the original decision. We propose that it would be beneficial for healthcare professionals to adopt the use of alternate frames as a way of developing a managed discussion of their problems and challenges, in order to develop a greater understanding of increasingly chaotic and ambiguous situations. We conclude by arguing that it will be advantageous to offer a set of decision-making tools, in the form of a toolkit, that enables healthcare managers to consider how they approach problem-solving and, potentially, expand the possible ideas considered. This toolkit is the focus of a subsequent paper.

Competing interests

The authors declare that they have no competing interests.

References

- Bolman L, Deal T. Reframing organizations. 3rd ed. San Francisco: Josey-Bass; 2003.
- Alvesson M. Knowledge work and knowledge intensive firms. London: Oxford University Press; 2005.
- Lee-Kelley L, Blackman DA. More than shared goals: the impact of mental models on team innovation and learning. J Innov and Learn. 2005: 2(1): 11-25.
- 4. Blackman DA, Henderson S. Double loop doubting: challenging past experience to frame the future. Futures. 2004; 36(2): 253-266.
- Mellahi K, Jackson P, Sparks L. An exploratory study into failure in successful organizations: the case of Marks and Spencer. Brit J Manage. 2002; 13(1): 15-30.
- Blackman DA, Henderson S. Autopoietic limitations of probing the future. In Tsoukas H, Shepherd J. Probing the future: developing strategic foresight in the knowledge economy. London: Blackwells; 2004.
- 7. Morgan G. Images of organisations. London: Sage; 1986.
- 8. Dunford R. Organisational behaviour. Sydney: Addison-Wesley; 1992.
- Palmer I, Dunford R. Conflicting uses of metaphors, reconceptualising their use in organizational change. Acad Manage Rev. 1996; 21(3): 691-707.
- Swan J, Scarborough H, Robertson, M. The construction of 'communities of practice' in the management of innovation. Manage Learn. 2002; 33(4): 477-496.
- Drucker, P. Innovation and entrepreneurship. London: Pan Books; 1985.
- 12. De Geus, A. The living company. Harv Bus Rev. 1997; 75(2): 51-59.
- Pedler M, Burgoyne J, Boydell T. The learning company: a strategy for sustainable development. 2nd ed. London: McGraw-Hill; 1997.
- 14 Nonaka I, Takeuchi H. The knowledge creating company. Oxford: Oxford University Press; 1995.
- Brown JS, Duguid P. Organizational learning and communitiesof-practice: toward a unified view of working, learning, and innovation. Org Science. 1991; 2(1): 40-57.
- Casnig J. Metaphor examples and resources. Available: http://knowgramming.com/ (Accessed 29/4/2007).
- 17. Aupperle KE, Karimalis GN. Using metaphors to facilitate cooperation and resolve conflict: examining the case of Disneyland Paris.

 J Change Manage. 2001; 2(1): 23-32.
- Lakoff G. The contemporary theory of metaphor. In Ortony, A. Metaphor and thought. 2nd ed. Cambridge: Cambridge University Press;1993.
- Lakoff G, Johnson M. Metaphors we live by. Chicago: University of Chicago Press; 1979.
- McCourt W. Using metaphors to understand and change organisations: a critique of Gareth Morgan's approach. Org Stud. 1997: 18(3): 511-523.
- Gibson CB, Zellmer-Bruhn ME. Metaphors and meaning: an intercultural analysis of the concept of teamwork. Adm Sci Q. 2001: 46(2): 274-303.
- 22. Cohen MD, March JG and Olsen JP. A garbage can model of organizational choice. Adm Sci Q. 1972; 17:1-25.
- 23. Hatch MJ. Jazz as a metaphor for organizing in the 21st Century. Org Sci. 1998: 9(5): 556-7.
- 24. Hatch MJ. The jazz metaphor for organizing: historical and performative aspects. Critical Management Studies Conference; 1999 July; University of Manchester.

- Tsoukas HH. Organizations as soap bubbles: an evolutionary perspective on organization design. Syst Pract. 1993; 6: 501-515.
- McCrickerd J. Metaphors, models and organisational ethics in healthcare. Med Ethics. 2003; 26: 340-345.
- Kumra S. The organization as human entity. In Oswick C, Grant D (eds). Organisation development: metaphorical explorations. London: Pitman Publishing;1996.
- 28. Oswick C, Grant D. Metaphor and organizations. London: Sage; 1996
- Braithwaite J. Organisational change, patient-focused care: an Australian perspective. Health Serv Manage Res. 1995. 8:172-185.
- Hunter D. The changing roles of health care personnel in health and health care management. Soc Sci Med. 1996; 43: 799-808.
- 31. Farrell M. Health care leadership in an age of change. Aust Health Rev. 2003; 26: 153-164.
- Law D. Boyce RA. Beyond organisational design: moving from structure to service enhancement. Aust Health Rev. 2003; 26: 175-185.
- Levinthal DA. Organizational adaptation and environmental selection - interrelated processes of change. Org Sci. 1991; 2(1): 141-145.
- Burns B. Organizational choice and organizational change. Manage Decis. 1997: 35(10): 753-759.
- Coulson-Thomas C. Transforming the company: the differing learning practices of successful and unsuccessful companies. Indust and Comm Train. 2003; 35(1): 5-10.
- De Cock C, Richards T. Thinking about organizational change: towards two kinds of process intervention. The Int J Org Anal. 1996: 4(3): 233-251.
- 37. McKendall M. The tyranny of change: organizational development revisited. J of Bus Ethics. 1993; 12:93-104.
- 38. Liang ZM, Short SD, Lawrence B. Healthcare reform in New South Wales 1986-1999: using the literature to predict the impact on senior health executives. Aus Health Rev. 2005: 29(3): 285-291.
- Palmer GR. The regionalization of health services: objectives, models and recent NSW experiences. Aust Health Rev. 1981; 4: 16-21.
- 40. Brown K, Waterhouse J, Flynn C. Change management practices: is a hybrid model a better alternative to public sector agencies. Int J Public Sect Manage. 2003; 16: 230-241.
- Fitzgerald JA, Lum M, Dadich A. How can human technologies improve decision-making practices in the operating theatre?
 4th Healthcare Technology Management Conference; 2005 August 25-26; Aalborg, Denmark.
- Fitzgerald JA, Lum M, Kippist L. Operating theatre bottlenecks: how are decisions about emergency theatre schedules made. 5th International CINet conference; 2004 September; Sydney, Australia. p.25-27.
- Fitzgerald JA. Doctors and nurses working together: a mixed method investigation into the construction and changing of professional identity. Unpublished PhD, University of Western Svdnev. 2003.
- 44. Creswell JW. Research design, qualitative and quantitative approaches. London: Routledge; 1994.