Construction cultures

Sources, signs, and solutions of toxicity

Clegg, Stewart; Loosemore, Martin; Walker, Derek; van Marrewijk, Alfons; Sankaran, Shankar

Publication date
2023

Document Version
Final published version

Published in
Construction Project Organising

Important note
To cite this publication, please use the final published version (if applicable).
Please check the document version above.

1

Construction Cultures: Sources, Signs, and Solutions of Toxicity

Stewart Clegg[1], Martin Loosemore[2], Derek Walker[3], Alfons van Marrewijk[4] and Shankar Sankaran[2]

[1]*University of Sydney, John Grill Institute and University of Stavanger Business School, Norway*
[2]*University of Technology Sydney, Australia*
[3]*The Royal Melbourne Institute of Technology, Australia*
[4]*Delft University of Technology and BI Norwegian Business School, Oslo*

1.1   Introduction

Early discussions on improving the collective shape of the overall culture of the construction industry revolved around the role that culture plays in construction industry performance and innovation (Anumba et al. 2006). More recent discussions have explored construction culture's impact on the industry's human resource management, corporate social responsibility, and sustainability performance (Azmat 2020). While valuable, cultural change in the sector is slow and challenging, with research being fragmented and in many cases failing to recognise the extent of ambiguity, subcultures, power relations, and the limited boundaries of rational behaviour in the sector. To address this issue, this chapter presents a holistic investigation into construction culture from an organisation studies as well as project management perspective, mobilising the concept of toxic project cultures as a novel conceptual lens to explore new ways to transform the construction industry into a more dynamic, innovative, and socially responsible sector.

1.2   Organisational Culture

The question of what is and is not organisational culture, as well as what its impact is or may be, has been widely debated since the formative work of Schein (1985) and Smircich (1983). Martin (2002) illustrates several approaches in defining an organisation's culture. Each starts from different sets of assumptions, each of which has a significant effect on how culture is subsequently conceptualised. Most frequently, an integrative view of culture is used, which stresses cultural coherence around a unitary frame of reference. Perhaps the

most widely known perspective in this vein is that of Schein, who, in an influential definition, regards organisational culture as:

> *'a pattern of shared assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.'*

(Schein 2004, p. 17).

Schein is joined by many others in this integrative view. For instance, Driskill and Brenton (2011, p. 5) define organisational culture as a socially constructed phenomenon, which defines an organisation's 'unique way of doing things' and the basis for shared meaning and collective action at both conscious and unconscious levels. However, such cultural concordance is highly improbable in practice. While values, assumptions, routines, and meanings may be shared by a (sub)group of people in an organisation, the concept of organisation culture must also include conflict and ambiguity about what is not shared (Martin 2002). It is more appropriate to talk of organisation cultures in the plural or to stress organisations consisting of subcultures, rather than assume a singular cultural consensus (Auch and Smyth 2010; van Marrewijk 2016). Furthermore, organisational cultural is both socially constructed and interactive, continuously being changed by actors in response to an external environment and internal organisational dynamics. When applied to projects, organisation cultures may display unity and coherence in rhetoric, but frequently lack it in practice. Projects are temporary organisations with an acute sense of temporality as well as being composed of a constellation of contested organisational and professional interests and logics with multifarious and plurivocal claims to stakeholding (Jia et al. 2019). Dominant narratives articulating project culture, especially those of elite actors, may superficially stress unity and coherence, while, beneath the surface, project cultures are likely to be influenced by inter-personal and inter- and intra-organisational conflicts between the project owner and client (van Marrewijk et al. 2016) as well as the project management team, contractors, subcontractors, and consultants in supply chains (van Marrewijk 2018).

When combined with intense pressures to perform under tight resource constraints and high levels of uncertainty and risk transfer from clients, such conflicts can nurture cultures of 'fragmentation, antagonism, mistrust, poor communication, short-term mentality, blame culture, casual approaches to recruitment, machismo and sexism' (Ankrah 2007, p. ii), which may be opposed both to legal norms and conventionally accepted codes of behaviour. A portmanteau term for this situation is that of organisational toxicity (van Rooij and Fine 2018). Toxic behaviour condones, neutralises, or enables systematic rule breaking, deviant and damaging behaviours; it disables and obstructs compliance and encourages practices that deviate from expressed values and deflects blame and denies responsibility when these practices are called out (van Rooij and Fine 2018). Toxic practices and behaviours in the construction industry are many. They include, amongst others, corruption, working practices that undermine health and well-being, unfair and opportunistic contractual practices, bullying, intimidation, and discrimination towards various 'out-groups'.

Surprisingly little has been written about the concept of toxic organisational and/or project cultures in the construction industry, despite significant evidence over many decades (Çerić 2016; Lim and Loosemore 2017). Therefore, we next explore how the concept of toxicity can provide new theoretical insights into and explanations of the construction industry's culture, the coping mechanisms that people use to survive it, and strategies that can be used to improve it.

1.3   Toxic Project Culture

Rhetorically, according to Blomquist et al. (2010), managing a project is a performance-based practice 'aiming at the constitution of, coordination and control of [its] activities' (Lundin et al. 2015, p. 3). The traditional engineering-based hard systems view of projects (Blomquist et al. 2010, p. 6) regards these practices as a 'structured, mechanistic, top-down, system-model-based approach relying on systems design, tools, methods and procedures'. In this rational view, the iron triangle of cost, time, and quality is the most basic criterion by which project success is traditionally measured (Pollack et al. 2018), although this is evolving continuously to incorporate softer criteria such as social and environmental value (Loosemore et al. 2021). Blomquist et al. (2010) point out that besides this rational image of how projects are structured, managed, and judged as a success or not, other perspectives are emerging. They point to process- and practice-based perspectives based on the understanding of a project as an accomplishment premised on everyday practices and improvisations. Here, practices are conceptualised as observable actions, meaningfully anchored in organisational cultures (Widler 2001). A practice-based understanding of projects is relevant for conceptualising toxic project cultures as in practice, project delivery constraints, conflicting institutional logics, conflicting subcultures, and poor risk management. Things often go awry, despite project actors being aware and knowledgeable about the value of collaboration and cooperation, including resolving conflicts in a reasonable way. Considerable emotional intelligence, institutional support, and resilient capabilities will be needed to overcome unexpected adversity, features that are frequently missing (Chen et al. 2021). Consequently, project actors too often retreat into self-interest engaging in opportunistic and defensive behaviour, exacerbating fragmentation, further reinforcing the propensity for project culture to take a toxic turn. Project actors respond in diverse ways, ranging from full assimilation into and perpetuation of toxic practices, through coping mechanisms such as humour to open resistance, dissent, and protest through to more informal, illegitimate, and subversive actions (Reed and Loosemore 2012).

1.4   Sources of Toxic Project Culture

There are various potential sources of toxic cultures in construction projects. As noted above, the concept of an integrated stable culture is ill-suited to the circumstances of a construction project in which multiple, temporally shifting participants move in and out of the project as it unfolds within often unrealistic time and budgetary constraints. Typically, this leads to the pursuit of opportunistic behaviours and practices, especially if, within the

context of traditional confrontational risk-shifting procurement practices, the project does not have the time or opportunity to develop an integrative culture. In addition, transactional project leadership practices imposing an ends-oriented mentality on the pursuit of project goals can also place intolerable burdens on project members creating toxic cultures exhibiting a range of dysfunctional affective, behavioural, and cognitive coping responses (Zhang et al. 2020). Many aspects of the construction industry's structure, traditions, practices, and norms, including high levels of masculinity, poor risk management, time and cost pressures, including presenteeism as well as bullying, legitimise, normalise, and justify toxic practices, which negatively impact project performance (Galea et al. 2021). Many project managers, despite being excellent in technical skills, simply lack the necessary social skills and emotional intelligence to manage projects, often being unable to regulate their own emotions and temperament (Potter et al. 2018).

Another possible source of toxic culture occurs when the relationship between project owners and project managers, as well as between project managers and contractors, is dysfunctional, resulting in stress for both the parties (van Marrewijk et al. 2016). Stress can be picked up and experienced by other project members and be projected down the line, often leading to the project team experiencing pressure for completion because of project management relational issues. As few projects last a lifetime, project participants experience a reasonable sample of good and bad projects. Consequently, it is reasonable to assume that most project members and stakeholders have a sound idea of how well the project is faring in terms of the toxicity of its management (van Marrewijk et al. 2016).

A final possible source of toxicity is when a construction project is thrown into crisis by unanticipated challenges and events (Loosemore 1999; Blay 2017). Such events highlight hidden inconsistencies and differences in perceptions between actors about where contractual risks lie, destabilising seemingly harmonious project relationships and causing actors to employ a range of legitimate and illegitimate tactics to defend their own interests or even survival. Even in normal times, projects can be characterised by a lack of shared and consistent goals between members and stakeholders (March and Olsen 1976). Projects are, therefore, arenas in which there is a somewhat random confluence of problems, solutions, and participants. Under these circumstances, when unanticipated events occur, actions typically consist of various solutions looking for problems to attach themselves to, to use Cohen et al.'s (1972) characterisation of a garbage can organisation.

Figure 1.1 seeks to conceptualise the potential sources of toxicity, which can become institutionalised in construction projects. It shows that toxicity can be fuelled by external and internal project influences. External influences relate to the business-economic context, whether 'aggressive' targets have been set and are rigorously enforced, particularly if the focus is on 'tight' cost–time budgeting and low bids and a predatory claim-chasing mentality. Professional norms may espouse client focus, but high levels of competition and client value-for-money expectations may undermine good behavioural intentions and interpretation of professional and craft ethical standards (Ruijter et al. 2021).

Project internal influences include structural factors such as how procurement arrangements craft governance and relationship information as well as power asymmetries. Project emotional influences include how people interact, levels of project organisational citizenship behaviour (Ostrom 2015), and affinity with the project (Dainty et al. 2005). Walker and Lloyd-Walker (2020a) explain the influence of skill variety, task identity, and significance
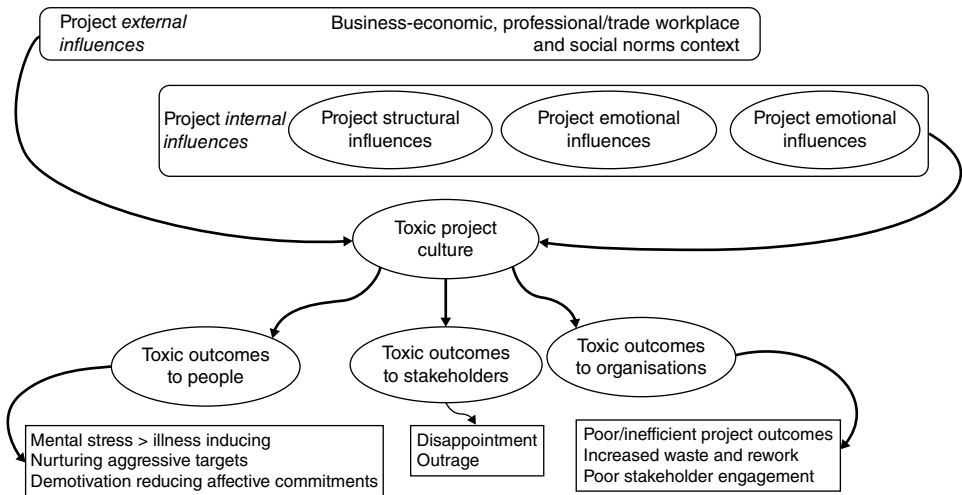
Figure 1.1 Conceptual model of project cultural toxicity and its impact. *Source:* authors.

on how work is interpreted as being meaningful, as well as the extent to which task autonomy is interpreted as work responsibility and how positively task feedback and salience are interpreted. Additionally, levels of physical, mental, and intellectual safety also have an impact on employee well-being, becoming sources of cultural toxicity, influencing project members as well as, potentially, stakeholders, and partner organisations alike (see Figure 1.1). The degree of aggressive compliance to performance expectations demanded by an aggressive project manager or client, as well as how incentives work in the project, is among many routines and other practices influencing how toxically the project is experienced, affecting degrees of member and stakeholder engagement as well as behaviour. Toxicity increases transaction costs for surveillance and control (Haaskjold et al. 2019), accelerating organisational underperformance in general.

1.5 Detoxing a Project Culture

While research points to several strategies that can be employed to reduce problems and impacts, as van Rooij and Fine (2018) found, detoxing an organisation culture requires a fundamental change of underlying structures and processes as well as values and practices enabling and sustaining toxic cultures. An approach promoting transparency, honesty, and responsibility for initiating and sustaining actual cultural change is required (van Marrewijk et al. 2014). Detoxing culture, van Rooij and Fine (2018) argue, begins with an assessment of the full complexity of interactions, structural, processual, and value-based that actors foster, enabling and supporting toxicity. However, in the long term, creating meaningful cultural change will depend not just on addressing these issues but also on ensuring accountability for perpetrators of toxicity, creating safe spaces for victims to contribute to change and forums for future toxicity to be flagged before it has another chance to take root. While doing this at a project level is already challenging (Ruijter et al. 2021), at an

organisational and industrial level, it requires cross sector and inter-organisational collaboration through forums that facilitate the exchange of views, experiences, and solutions (van Marrewijk et al. 2014). An example of such a forum is the Australian Constructors Association's Construction Industry Culture Taskforce.[1]

Building on the above analysis of the causes and consequences of toxic cultures, questions requiring answers at an industry and organisational level include how toxic project cultures can present opportunities that prompt project managers and other team members to improvise, experiment and learn? What is the relation of toxic project cultures to parent organisations and more permanent institutional structures in the construction industry, such as industry peak bodies and professional institutions that set standards of behaviour? As van Rooij and Fine (2018) note, such questions will require methodological approaches able to reveal toxic project elements at the three levels of an organisational culture identified by Schein (2004), including forensic ethnography. These levels can be distinguished as those of artefacts (rules, targets and incentives, hierarchy, and spatial settings), practices (visible and implicit common behaviours, situational norms, project rituals, decision-making, and agenda-setting) and values (explicit shared values, injunctive social norms, taboos, and hidden assumptions).

Traditional research tools such as surveys and structured face-to-face interviews are restricted in their ability to reveal these aspects of toxic project culture. They are limited to what we can easily measure, while the very small amount of research insight that we already have defines the questions to be asked. Surveys are not very effective at getting beneath the surface of organisational life into informal institutions and practices that often drive behaviour in toxic cultures. Furthermore, in such a nascent and exploratory field of research, they provide little if any opportunity for researchers to explore unexpected leads into important and unpredictable elements of toxic project cultures. Forensic ethnography requires an interpretivist epistemology that involves the use of in-depth qualitative methods enabling close interaction between respondents and researchers, using qualitative social science research methods and ethnography (Ybema et al. 2009). Despite drawing on deep ethnographic knowledge, detoxing the construction industry will be challenging. The process of assessing a project culture as toxic may undermine successful interventions as it is likely to prompt a backlash from those with vested interests in the status quo. Many project institutions and practices leading to toxic behaviour, whether formal or informal, are likely to be deeply ingrained, sticky, invisible, and resistant to change.

All levels of culture will need to change, and to be effective, attention on the part of project leadership to the change process is required on an everyday basis (Alvesson and Sveningsson 2016). Changing only surface manifestations, those of artefacts and symbols, will not root out problems and eradicate toxic cultures. The underlying processes of inclusion and exclusion, the practices of decision-making and agenda-setting, as well as deeply embedded values frame cultures. If incoming leadership is genuinely different in their values and commitment to cultural change from strongly normalised local project sentiments, they will clash. When trying to hold executives responsible, let alone prosecuting them, one of the unintended consequences of doing so can cause cover ups and blame-shifting and

---

[1] https://www.constructors.com.au/initiatives/construction-industry-culture-taskforce/.

other avoidance behaviours further strengthening the toxic culture. Even when structures and leaders are successfully changed, lower-level managers and employees may obstruct the change implemented, since it is often the case that everyone is involved in rule breaking to some degree (van Marrewijk 2018). Detoxing is likely to require unlearning deeply engrained practices and cognitive restructuring of basic values and assumptions (Schein 2004). Unlearning involves very different cognitive processes to learning and can be especially challenging when it comes to organisational cultural factors, which are deeply embedded (Chandra and Loosemore 2011). A sense of learned helplessness can also develop and spread over time in organisations where power asymmetries make toxic cultures appear inevitable and normalised.

1.6 Stimulating Reflection and Learning

Toxic cultures characterise projects at their worst; what about projects at their best? Projects attuned to reflection and organisation learning are clearly better places in which to work than those projects that foster a toxic culture as well as being more likely to produce better project outcomes. As project cultures coalesce around various issues and events, the diversity of project participants can be turned into a project learning advantage (Senge 1992). The best projects manage their diversity as deliberately directed through purposive strategies. Examples include Olympic projects (Clegg et al. 2002; Pitsis et al. 2003) and the building of the museum of New Zealand Te Pap Tongerwa (Freeder et al. 2021, p. 139), embracing Maori heritage in the design and development of the museum. The people in these projects were driven by the vision of the project, resulting in a project design that enacted a culture premised on learning and deliberation in pursuit of an ultimate and shared value rather than a sectional interest, such as bringing in a project profitably.

In projects, technical errors and failures are *normally* detected and the causes identified to ensure they are not repeated in future (Argyris and Schön 1978). Such single-loop learning takes place within the existing rules, policies, and structures of the project organisation and is essentially corrective. Double-loop learning by contrast requires thinking and learning to do different things to arrive at project goals differently, changing social actions and relations. Doing this is not easy and is constrained by some methods of procurement in the construction industry (Newcombe 1999). Bateson (1958) conceived of another specific type of learning that he called deutero-learning, often referred to as 'triple-loop learning', which involves 'learning to learn' (Schön 1975, p. 8). Projects vested in this mode of learning recognise, reflect on, and change what they are doing by disrupting assumptions, creating discontinuities. Such project learning relies on cultures in which curiosity and innovation are valued and practiced (Ruijter et al. 2021). Projects that prize routines and rational plans as if they were black letter law, rather than as facilitating dynamic practices and capabilities (Parmigiani and Howard-Grenville 2011), will find it much harder to develop emergent approaches, to attend to the flow of process, to be able to improvise as events require. Where a project culture strives hard for top-down integration on the project leaders' terms, such leaders will be less likely alert to opportunities to learn as communication flows will tend to be one-way.

Excellent examples of a learning project culture are integrated project delivery forms such as alliancing and partnerships (Ruijter et al. 2021). Ruijter et al. (2021) highlight radical

process innovation in designing and creating a construction project culture to support a public–private partnership through a series of reflection sessions. Walker and Rowlinson (2020) argue that the organisational structure and governance of an alliance contract is designed to overcome many potential toxicity problems. Doing so is not without problems, as Reed and Loosemore (2012) discuss in their discussion of the differences in project culture between alliance and traditionally procured construction projects and the culture shock that construction professionals must navigate when they move from one to another and back again (see Figure 1.2).

Two designed-in alliance contract elements address the toxicity of project culture. First, multi-party forms of agreement integrating design, construction delivery, facility operation, and project owner are necessary for an alliance project culture to create an integrated team for project delivery (Transport 2011). Contract terms stress that an integrated team will execute the work and realise the project output, instead of each contract partner being accountable for their separate part (Ross et al. 2014). Doing so inspires a sense of governmentality that draws the project's teams together (Clegg et al. 2002; Pitsis et al. 2003; Clegg 2019; Ninan et al. 2019). Alliance governance arrangements reduce power and information asymmetry between project participants (Andersen et al. 2020), resulting in project participants sharing a commitment to achieve a best-for-project outcome (Morwood et al. 2008).

Genuine collaboration is premised on alliance participants' respecting each other's expertise and abilities and behaving openly and honestly in their dealings (Morwood et al. 2008). Teams with disparate professional cultures adjust and align their values to a common core, as reported upon in a Finnish alliance project by Matinheikki et al. (2019). Effective and intense collaboration is also facilitated by a no-blame trusting project organisational environment (Lloyd-Walker et al. 2014; Walker and Lloyd-Walker 2020b). No-blame trust is not a pre-given, but has to be developed and maintained throughout the project in a reciprocal relationship between project partners (Ruijter et al. 2021).

All these properties were evident in Pitsis et al.'s (2003) and Clegg et al.'s (2002) study of a major piece of infrastructure associated with the 2000 Olympics in Sydney. The project had

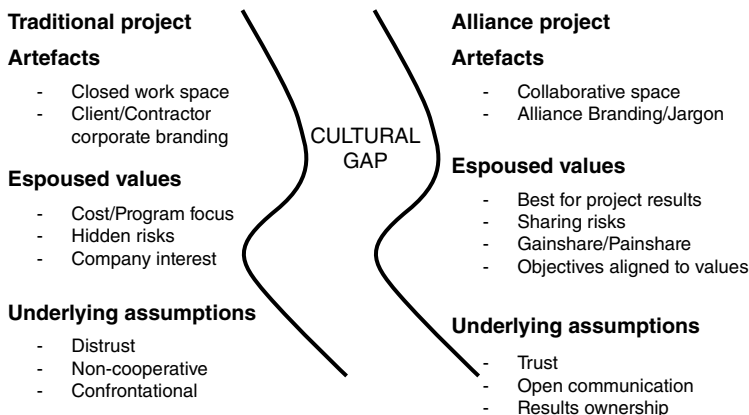| **Traditional project**		**Alliance project**
Artefacts		**Artefacts**
- Closed work space - Client/Contractor corporate branding		- Collaborative space - Alliance Branding/Jargon
	CULTURAL GAP	
Espoused values		**Espoused values**
- Cost/Program focus - Hidden risks - Company interest		- Best for project results - Sharing risks - Gainshare/Painshare - Objectives aligned to values
Underlying assumptions		**Underlying assumptions**
- Distrust - Non-cooperative - Confrontational		- Trust - Open communication - Results ownership

Figure 1.2 Culture gap between alliance and traditionally procured project organisations. *Source:* Reed and Loosemore (2012).

several effective elements constitutive of a more integrated culture. Starting at the outset, the project owner, Sydney Water, chose the alliance partners based on the degree of cultural openness and flexibility they displayed in the tender stage. The tender stage was unconventional; there was no detailed brief, just a statement of purpose to build a storage tunnel on the north side of Sydney Harbour that could capture extreme rain events and prevent the sewage system overflowing, with its contents polluting the harbour and its environs. The tender document was largely composed of photos of the harbour glistening in the sunshine interspersed with shots of the contents of the sewer as well as street detritus in the harbour.

The tender process involved a process in which the degrees of cultural flexibility and openness of the tendering representatives was the main object of scrutiny. The partners were selected based on their willingness to work according to a risk/return contract. Independent auditors had costed what a 'business as usual' project delivery would cost and how long it would take. The latter was important; this project had to be completed in slightly more than half of 'normal time' if it was to be ready for the Olympics. The project owner realised this would take considerable innovation in the project. A risk/return case was based on the independent audit; if the project came in positively on *all* the key performance indicators for the project, there would be a sharing of the profits accrued by saving on the audit's projected costs. These indicators were cost, schedule, occupational health and safety, ecology, and community. Cost and schedule need no explanation. Occupational health and safety should not; in this case, they were particularly important. The construction workers' union was made a stakeholder in the risk/return calculus, so that it would be a beneficiary of innovation in the project. Weekly toolbox meetings were held in which innovative ideas were promoted that could be turned into practice. The harbour is a fragile ecology that the project sought to improve; measures of normal turbidity were a benchmark against which the project, involving barges to ship spoil to a trucking site, was measured. Community was important because the harbour's north side has many affluent suburbs fronting on the water and several measures were taken to ensure that the project did not diminish social capital in these communities.

The project processes that ensued were centred on a specifically designed project culture with 10 points ordered around 'whatever's best for project' autonomously designed by the alliance partners. In the project, each indicator had a regularly rotated champion; for instance, engineers might find themselves championing ecology and ecologists engineering. The organisation learning that ensued was invaluable as it integrated knowledge and sentiment across the disciplinary silos.

The lesson is simple: project organising that is premised on the assumption of an integrated culture that is defined top-down and assumed to be shared because project management has assumed that it is far less likely to produce excellent results than project organising that is premised on creative and constructive conflict, robust 'idea work' (Coldevin et al. 2019) producing deliberated outcomes to which the project adheres precisely because they have been deliberated rather than imposed and assumed. The assumption of integrated cultures that assumes harmony and coherence is usually an illusion; of far more value is a robust and challenging project culture that celebrates its differences and its conflicts and learns from them.

1.7 Conclusions

Alliancing mitigates cultural toxicity (Walker and Lloyd-Walker 2020b). Genuine dialogue between project participants in a low power-information asymmetry environment, in which project participants are expected to challenge assumptions, debate, and explore design and delivery proposals so that they fully understand proposed ideas and can innovate them further (Walker and McCann 2020), creates positivity through robust perspective-taking probing ideas. Senge (1992, p. 241) argues that in effective deliberative dialogue, 'surprising outcomes are achieved that are superior to any one person's or group's starting position'. A key question for future research that addresses project culture that extends beyond alliancing is the extent to which effective deliberative dialogue can be an antidote to toxic culture.

Where projects strive to be highly innovative, they will learn from conflicts, learn from differences, appreciating that any complex project is never *a* culture but a melange of different cultures and subcultures that, rather than being forced into harness and integration with each other, can be sources for deliberations from which pragmatic integration and a degree of tolerance for variance emerges. There may be lessons here that might make more projects more innovative. Thus, there are implications and applications for practice that are twofold. First, our discussion informs practitioners that the cultural transformation of the construction industry is a laborious but necessary process. For example, to contribute to the transition towards a circular economy, construction firms must reflect upon the emergence and acceptance of new practices related to changing organisational roles and responsibilities. Inter-organisational strategic change projects can serve as 'temporary trading zones' (Lenfle and Söderlund 2015), in which actors from different organisations bring in different work practices, narratives, norms, and values, thus creating opportunities for experimenting, knowledge exchange, and changing behaviour. In these arenas, doing things in unusual ways should always be on the agenda, to unlearn ingrained routines. Unlearning involves very different cognitive processes to learning (Chandra and Loosemore 2011). Second, successful as well as unsuccessful projects can function as drivers for change within parent organisations by pressuring shifting, frequently informal, rules within the dominant regime. Project actors bringing in their newly learned practices can spread change within their own organisations and thus contribute to transformation.

References

Alvesson, M. and Sveningsson, S. (2016). *Changing Organizational Culture: Cultural Change Work in Progress*. London: Routledge.

Andersen, B.S., Klakegg, O., and Walker, D.H.T. (2020). IPD governance implications. In: *Routledge Handbook of Integrated Project Delivery* (ed. D.H.T. Walker and S. Rowlinson), 417–438. Abingdon, Oxon: Routledge.

Ankrah, N. (2007). Investigation into the impact of culture on construction project performance. PhD Thesis. University of Wolverhampton.

Anumba, C.E., Dainty, A., Ison, S. et al. (2006). Understanding structural and cultural impediments to ICT system integration: a GIS-based case study. *Engineering, Construction and Architectural Management* 13: 616–633.

Argyris, C. and Schön, D.A. (1978). *Organizational Learning: A Theory of Action Perspective*. Reading, Mass: Addison-Wesley.

Auch, F. and Smyth, H.J. (2010). The cultural heterogeneity of project firms and project teams. *International Journal of Managing Projects in Business* 3 (3): 443–461.

Azmat, Y. (2020). Influence of human factors on the safety performance in Saudi Arabian construction industry. PhD Thesis. University of Salford.

Bateson, G. (1958). *Naven: A Survey of the Problems Suggested by a Composite Picture of the Culture of a New Guinea Tribe Drawn from Three Points of View*. Stanford, CA: Stanford University Press.

Blay, K.B. (2017). Resilience in Projects: Definition, Dimensions, Antecedents and Consequences. PhD Thesis, Loughborough University.

Blomquist, T., Hällgren, M., Nilsson, A. et al. (2010). Project-as-practice: in search of project management research that matters. *Project Management Journal* 41 (1): 5–16.

Čerić, A. (2016). *Trust in Construction Projects*. London: Routledge.

Chandra, V. and Loosemore, M. (2011). Communicating about organizational culture in the briefing process: case study of a hospital project. *Construction Management and Economics* 29 (3): 223–231.

Chen, Y., Chen, Y., Smyth, H. et al. (2021). Enforcement against contract violation in Chinese construction projects: impacts of trust and perceived intentionality. *Construction Management and Economics* 39 (8): 687–703.

Clegg, S.R. (2019). Governmentality. *Project Management Journal* 50 (3): 266–270.

Clegg, S.R., Pitsis, T.S., Rura-Polley, T. et al. (2002). Governmentality matters: designing an alliance culture of inter-organizational collaboration for managing projects. *Organization Studies* 23 (3): 317–337.

Cohen, M.D., March, J.G., and Olsen, J.P. (1972). A garbage can model of organizational choice. *Administrative Science Quarterly* 17 (1): 1–25.

Coldevin, H.G., Carlsen, A., Clegg, S.R. et al. (2019). Organizational creativity as idea work: intertextual placing and legitimating imaginings in media development and oil exploration. *Human Relations* 72 (8): 1369–1397.

Dainty, A.R.J., Bryman, A., Price, A.D.F. et al. (2005). Project affinity: the role of emotional attachment in construction projects. *Construction Management and Economics* 23 (3): 241–244.

Driskill, G.W. and Brenton, A.L. (2011). *Organizational Culture in Action: A Cultural Analysis Workbook*. Thousand Oaks, CA: Sage.

Freeder, D., Sankaran, S., and Clegg, S.R. (2021). The Museum of New Zealand Te Papa Tongarewa: a labour of love and learning. In: *Megaproject Leaders: Reflections on Personal Life Stories* (ed. N. Drouin, S. Sankaran, A. van Marrewijk and R. Müller), 139–149. Cheltenham: Edward Elgar Publishing.

Galea, N., Powell, A., Salignac, F. et al. (2021). When following the rules is bad for wellbeing: the effects of gendered rules in the Australian construction industry. *Work, Employment and Society* 36 (1): 119–138.

Haaskjold, H., Andersen, B., Lædre, O. et al. (2019). Factors affecting transaction costs and collaboration in projects. *International Journal of Managing Projects in Business* 13 (1): 197–230.

Jia, A.Y., Rowlinson, S., Loosemore, M. et al. (2019). Institutional logics of processing safety in production: the case of heat stress management in a megaproject in Australia. *Safety Science* 120: 388–401.

Lenfle, S. and Söderlund, J. (2015). *Projects as temporary trading zones: a theoretical proposal and empirical illustrationIRNOP* (ed. A. Davies), 21–24. London: University College London.

Lim, B.T.H. and Loosemore, M. (2017). The effect of inter-organizational justice perceptions on organizational citizenship behaviors in construction projects. *International Journal of Project Management* 35 (2): 95–106.

Lloyd-Walker, B.M., Mills, A., and Walker, D.H.T. (2014). Enabling construction innovation: the role of a no-blame culture as a collaboration behavioural driver in project alliances. *Construction Management and Economics* 32 (3): 229–245.

Loosemore, M. (1999). A grounded theory of construction crisis management. *Construction Management and Economics.* 17 (1): 9–19.

Loosemore, M., Alkilani, S.Z., and Murphy, R. (2021). The institutional drivers of social procurement implementation in Australian construction projects. *International Journal of Project Management* 39 (7): 750–761.

Lundin, R.A., Arvidsson, N., Brady, T. et al. (2015). *Managing and Working in Project Society: Institutional Challenges of Temporary organizations*. Cambridge: Cambridge University Press.

March, J.G. and Olsen, J.P. (1976). *Ambiguity and Choice in Organizations*. Bergen: Universitetsforlaget.

van Marrewijk, A.H. (2016). Conflicting subcultures in M&A: a longitudinal study of integrating a radical internet firm into a bureaucratic telecoms firm. *British Journal of Management* 27 (2): 338–354.

van Marrewijk, A.H. (2018). Digging for change: change and resistance in interorganizational projects in the utilities sector. *Project Management Journal* 49 (3): 34–45.

van Marrewijk, A., Veenswijk, M., and Clegg, S.R. (2014). Changing collaborative practices through cultural interventions. *Building Research and Information: The International Journal of Research, Development and Demonstration* 42 (3): 330–342.

van Marrewijk, A.H., Ybema, S.B., Smits, K.C.M. et al. (2016). Clash of the Titans: Temporal organizing and collaborative dynamics in the Panama Canal megaproject. *Organization Studies* 37 (12): 1745–1769.

Martin, J. (2002). *Organizational Culture: Mapping the Terrain*. Thousand Oaks, CA: Sage Publications.

Matinheikki, J., Aaltonen, K., and Walker, D.H.T. (2019). Politics, public servants, and profits: institutional complexity and temporary hybridization in a public infrastructure alliance project. *International Journal of Project Management* 37 (2): 298–317.

Morwood, R., Pitcher, I., and Scott, D. (2008). *Alliancing, a Participant's Guide – Real Life Experiences for Constructors, Designers, Facilitators and Clients*. Brisbane: AECOM.

Newcombe, R. (1999). Procurement as a learning process. *Journal of Construction Procurement* 5 (2): 211–220.

Ninan, J., Clegg, S.R., and Mahalingam, A. (2019). Branding and governmentality for infrastructure megaprojects: the role of social media. *International Journal of Project Management* 37 (1): 59–72.

Ostrom, E. (2015). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Parmigiani, A. and Howard-Grenville, J. (2011). Routines revisited: Exploring the capabilities and practice perspectives. *Academy of Management Annals* 5 (1): 413–453.

Pitsis, T.S., Clegg, S.R., Marosszeky, M. et al. (2003). Constructing the Olympic dream: a future perfect strategy of project management. *Organization Science* 14 (5): 574–590.

Pollack, J., Helm, J., and Adler, D. (2018). What is the Iron Triangle, and how has it changed? *International Journal of Managing Projects in Business* 11 (2): 527–547.

Potter, E.M., Egbelakin, T., Phipps, R. et al. (2018). Emotional intelligence and transformational leadership behaviours of construction project managers. *Journal of Financial Management of Property and Construction* 23 (1): 73–89.

Reed, H. and Loosemore, M. (2012). Culture shock of alliance projects. *Association of Researchers in Construction Management (ARCOM): 28th Annual Conference,* Edinburgh, United Kingdom, (3–5 September), 543–553.

van Rooij, B. and Fine, A. (2018). Toxic corporate culture: assessing organizational processes of deviancy. *Administrative Sciences* 8 (3): p23.

Ross, J., Dingwall, J., and Dinh, H. (2014). *An Overview of Collaborative Contracting: Making Collaboration Effective and Choosing the Right Framework*. Melbourne: PCI Group.

Ruijter, H., van Marrewijk, A., Veenswijk, M. et al. (2021). 'Filling the mattress': trust development in the governance of infrastructure megaprojects. *International Journal of Project Management* 39 (4): 351–364.

Schein, E.H. (1985). *Organizational Culture and Leadership*. San Francisco, CA: Jossey-Bass.

Schein, E.H. (2004). *Organizational Culture and Leadership*. 3e. San Francisco, CA: Jossey-Bass.

Schön, D. (1975). Deutero-learning in organizations: learning for increased effectiveness. *Organizational Dynamics* 4 (1): 2–16.

Senge, P.M. (1992). *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday/Currency.

Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative Science Quarterly* 28 (3): 339–358.

Transport (2011). *National Alliance Contracting Policy Principles*. Canberra: Department of Infrastructure and Transport.

Walker, D.H.T. and Lloyd-Walker, B.M. (2020a). Knowledge, skills, attributes and experience (KSAE) for IPD-alliancing task motivation. In: *Routledge Handbook of Integrated Project Delivery* (ed. D.H.T. Walker and S. Rowlinson), 219–244. Abingdon, Oxon: Routledge.

Walker, D.H.T. and Lloyd-Walker, B.M. (2020b). Behavioural elements of the IPD collaboration framework. In: *Routledge Handbook of Integrated Project Delivery* (ed. D.H.T. Walker and S. Rowlinson), 315–344. Abingdon, Oxon: Routledge.

Walker, D.H.T. and McCann, A. (2020). IPD and TOC development. In: *Routledge Handbook of Integrated Project Delivery* (ed. D.H.T. Walker and S. Rowlinson), 581–604. Abingdon, Oxon: Routledge.

Walker, D.H.T. and Rowlinson, S. (2020). IPD from a culture perspective. In: *Routledge Handbook of Integrated Project Delivery* (ed. D.H.T. Walker and S. Rowlinson), 197–218. Abingdon, Oxon: Routledge.

Widler, A. (2001). What anchors cultural practices? In: *The Practice Turn in Contemporary Theory* (ed. K. Knorr Cetina and E. von Savigny), 74–92. New York: Routledge.

Ybema, S., Yanow, D., Wels, H. et al. (2009). *Organizational Ethnography: Studying the Complexities of Everyday Life*. London: Sage Publications.

Zhang, L., Yao, Y., and Yiu, T.W. (2020). Job burnout of construction project managers: exploring the consequences of regulating emotions in workplace. *Journal of Construction Engineering and Management* 146 (10): 4020117.