
WHITEPAPER

Envision, Diagnose, Design

A Behaviour-First Dialogue Methodology for Organisational Culture Change

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ABSTRACT

Organisational culture change remains one of the most studied and least solved problems in management science. Despite substantial investment in diagnostic instrumentation, survey methodology, and values-alignment programmes, the gap between stated organisational culture and lived behavioural reality persists across industries, sectors, and geographies. This paper argues that the dominant paradigm — measurement followed by prescription — operates at the wrong level of human experience, targeting attitudes and values while leaving the behavioural environment that produces them largely unchanged. It further argues that the instruments most commonly deployed to measure culture are structurally incapable of producing the conditions that change requires — not because of their content, but because of their form.

Drawing on five years of practitioner inquiry across more than fifty organisations and two thousand participants in corporate, government, educational, and non-profit settings, this paper proposes a behaviour-first framework for organisational culture change and presents the Culture Science Cards — a gamified physical artefact methodology — as its practical instantiation. The framework synthesises four theoretical traditions: constructivism, behavioural economics, semiotics, and gamified dialogue design. It argues that physical artefact-mediated facilitation produces qualitatively different conditions for honest cultural self-assessment than survey-based diagnostic instruments, and that these conditions are prerequisite to genuine and sustained behavioural change.

The methodology described — termed Structured Behavioural Dialogue — is anchored by a single opening question asked of every group: ‘What behaviours are required in this team for you and your teammates to perform at their best?’ This near transfer prompt — personal, team-level, and performance-anchored rather than abstract and organisational — was designed to invite participants to articulate the culture they need from their own experience rather than to imagine a hypothetical ideal. In practice, across independent groups in diverse organisational contexts, the envisioning process consistently gave rise to a spontaneous three-phase sequence: Envision, Diagnose, Design. Participants did not stop at articulating what their team needed. Animated by the recognition of shared aspiration and equipped with a precise behavioural vocabulary, they moved organically into diagnosis — naming the gap between what they had just described and what they actually experienced — and from diagnosis into design, identifying specific behavioural and environmental changes that would close the gap. This emergent sequence, consistent across more than fifty organisations, is interpreted as evidence that the methodology creates the conditions for a form of collective self-directed culture change that prescribed diagnostic approaches structurally preclude.

The paper identifies and theorises six structural elements of the methodology that together constitute what is termed the Structured Epistemic Equality Framework: the absence of evaluatively correct answers; interpretive freedom in card engagement; two anchoring questions that force dual-perspective analysis before judgment; facilitator content discipline that preserves the group as the knowledge authority; a dealing mechanism that creates structural epistemic equality and mandates participation without volunteering; and a consensual placement negotiation convention that produces non-coercive agreement consistent with Habermas's ideal speech situation. These six elements are argued to produce, as their emergent collective outcome, a version of Norton, Mochon and Ariely's Ikea Effect operating at the group level — a disproportionately high valuation of, and commitment to, the culture map the group has built together. This collective Ikea Effect is proposed as the primary mechanism through which the methodology produces behavioural commitment where diagnostic reporting does not.

Five original theoretical contributions are advanced. First, a theoretical inversion is proposed: that in organisational culture, behaviour change precedes and produces belief change, inverting the assumptions of the dominant paradigm. Second, the physical card is theorised as an epistemic tool whose tangibility restructures the social and psychological dynamics of group conversation in ways digital instruments

cannot replicate. Third, the gamified structure of the card sort is reconceptualised as psychological safety infrastructure — a choice architecture that reduces social risk and enables the honest expression that culture change requires. Fourth, the collective Ikea Effect is proposed as an extension of Norton et al.'s individual-level findings to the domain of group-constructed culture artefacts. Fifth, observational evidence is presented for a hierarchical perception gap — a systematic divergence between senior and frontline assessments of organisational culture — and a formal quantitative methodology, the Culture Perception Gap Index, is proposed as a research instrument for future investigation.

Qualitative findings drawn from facilitated sessions reveal consistent phenomenological patterns: the rapid collapse of pluralistic ignorance as shared cultural patterns are named simultaneously by independent groups; progressive disclosure from performative to authentic expression as trust develops within sessions; the near-universal presence of the aspiration gap between stated organisational values and rewarded behaviours; the emergence of systemic rather than individual attribution of cultural dysfunction; and the spontaneous transition from cultural conversation to culture change design. The paper concludes that organisational culture change requires not better measurement but better conversation — and that the conditions for better conversation can be deliberately designed.

Keywords: *organisational culture change, behavioural economics, gamification, structured behavioural dialogue, psychological safety, physical artefacts, epistemic equality, aspiration gap, hierarchical perception gap, Ikea Effect, practitioner inquiry, behaviour-first intervention, Envision-Diagnose-Design*

1. Introduction

Organisations do not have culture problems. They have behaviour problems that culture language has made harder to solve.

The irony of the organisational culture field is that its most significant contribution — giving managers a vocabulary for the invisible forces that shape collective behaviour — may also be its most significant limitation. Once culture became a noun, it became a thing to be measured, diagnosed, and fixed. Consultants arrived with surveys. Reports were produced. Workshops were held. Values were articulated, printed, and displayed. And in most cases, the behaviour that prompted the original concern continued largely unchanged.

This is not a failure of effort or intention. It is a failure of level. The dominant paradigm in organisational culture work operates at the level of attitude, belief, and value — the internal states that culture language most naturally describes. Yet behavioural science has established with considerable consistency that internal states are poor predictors of behaviour, and that behaviour is primarily a function of environment, context, and social norm (Thaler and Sunstein, 2008; Kahneman, 2011; Duhigg, 2012). Telling people what the culture should be, and asking them to report how aligned they feel with it, changes neither the environment nor the norm. It changes the language people use to describe what they already do.

The consequences of this misalignment between paradigm and mechanism are visible in the research literature and in practice. Culture change initiatives consistently underdeliver against their stated objectives (Kotter, 1995; Beer and Nohria, 2000). Employee engagement surveys produce data that organisations struggle to translate into action (Macleod and Clarke, 2009). Values alignment programmes generate compliance without commitment (Argyris, 1990). The gap between what organisations say they stand for and what their people actually experience — what this paper terms

the aspiration gap — remains one of the most persistent and least addressed phenomena in organisational life.

This paper proposes a different starting point. Rather than asking what an organisation's culture is and then attempting to change it through prescription, it asks which behaviours are currently present in the organisation, which behaviours would produce the culture the organisation wants, and what conditions would make those behaviours more likely to occur naturally. This reorientation — from diagnosis to dialogue, from measurement to facilitation, from values prescription to behavioural agreement — is the central argument of the paper.

The vehicle for this argument is the Culture Science Cards, a gamified physical artefact methodology developed and refined through five years of practitioner inquiry across more than fifty organisations and two thousand participants in corporate, government, educational, and non-profit settings. The methodology draws on four theoretical traditions — constructivism, behavioural economics, semiotics, and gamified dialogue design — and instantiates them in a structured facilitation process that produces conditions for honest cultural self-assessment that survey-based diagnostic instruments have been shown to be unable to replicate.

Four original contributions are advanced in this paper. First, a theoretical inversion is proposed: that in the context of organisational culture, behaviour change precedes and produces belief change, rather than the reverse. Second, the physical card is theorised as an epistemic tool whose tangibility restructures the social and psychological dynamics of group conversation in ways that digital interfaces and survey instruments cannot replicate. Third, the gamified structure of the card sort is reconceptualised not as an engagement mechanism but as psychological safety infrastructure — a form of choice architecture that reduces social risk and enables honest expression. Fourth, observational evidence is presented for a hierarchical perception gap — a systematic divergence between senior and frontline assessments of organisational culture — and a formal quantitative methodology, the Culture Perception Gap Index, is proposed as a research instrument for future investigation.

The paper proceeds as follows. Section 2 reviews the relevant literature across organisational culture theory, behavioural economics, gamification, semiotics, and psychological safety, identifying the theoretical gap that this paper addresses. Section 3 presents the theoretical framework synthesising the four pillars of the Culture Science model. Section 4 describes the sixteen-theme behavioural taxonomy and the Structured Behavioural Dialogue methodology in detail. Section 5 presents qualitative findings from five years of facilitated sessions, interpreted through the theoretical framework. Section 6 presents the hierarchical perception gap observation and the proposed Culture Perception Gap Index methodology. Section 7 discusses implications for research and practice. Section 8 concludes.

A note on positionality is warranted at the outset. This paper adopts a practitioner-inquiry stance consistent with the action research tradition (Reason and Bradbury, 2008; Schön, 1983). The author has spent years facilitating culture work using conventional diagnostic and measurement instruments across hundreds of sessions and thousands of participants. The Culture Science Cards methodology described in this paper was developed and refined over a subsequent five-year period across more than fifty organisations and two thousand participants. The observations presented draw on both bodies of experience — and specifically on the consistent contrast between what the two approaches produce in practice. The limitations of this positionality — including the potential

for confirmation bias and the absence of independent observation — are acknowledged throughout and inform the future research agenda proposed in Section 6. The paper makes no claim to the objectivity of detached empiricism. It claims instead the rigour of systematic practitioner reflection — what Schön (1983) termed knowledge-in-action — and the theoretical coherence of a framework grounded in five decades of converging research across multiple disciplines.

2. Literature Review

2.1 Organisational Culture Theory

The concept of organisational culture entered mainstream management discourse in the early 1980s, propelled by a confluence of practitioner interest and academic inquiry that sought to explain why organisations with similar strategies, structures, and resources produced markedly different outcomes (Peters and Waterman, 1982; Deal and Kennedy, 1982). The question animating this early work was deceptively simple: why do some organisations work better than others, and what is the nature of the invisible force that makes the difference? The answers converged on a construct — culture — that proved simultaneously illuminating and resistant to precise definition.

Edgar Schein's (1985) three-level model remains the most cited and most influential framework in the field. Schein proposed that organisational culture operates at three levels of depth and visibility. At the surface lie artefacts — the visible, tangible manifestations of culture including physical environments, rituals, stories, and stated values. Beneath artefacts lie espoused values — the explicit beliefs and norms that members articulate when asked what the organisation stands for. At the deepest level lie basic underlying assumptions — the unconscious, taken-for-granted beliefs about human nature, relationships, and reality that have become so embedded they are no longer questioned. Schein's critical insight was that genuine culture change requires intervention at the level of basic assumptions, and that most culture programmes never reach below the artefact level. They change what organisations say without changing what organisations do.

This insight has proven remarkably durable. Four decades of culture change research have largely confirmed Schein's observation that interventions operating at the artefact and espoused values levels produce limited and frequently temporary behavioural change (Kotter and Heskett, 1992; Cameron and Quinn, 2011). The culture poster, the values workshop, the engagement survey — these are artefact-level interventions. They change the vocabulary of the organisation without changing the behavioural environment that produces its culture.

Quinn and Rohrbaugh's (1983) Competing Values Framework offered a complementary contribution, mapping organisational culture across two dimensions — internal versus external orientation, and flexibility versus control — to produce four cultural archetypes: Clan, Adhocracy, Market, and Hierarchy. The framework's enduring value lies less in its taxonomy than in its demonstration that cultural orientations involve genuine trade-offs — that the values associated with control and stability are not simply inferior to those associated with flexibility and collaboration, but that different organisational contexts require different cultural configurations. This insight complicates the culture change project considerably. There is no universally optimal culture. There is only the question of which behavioural orientations serve a particular organisation's purpose in its particular context — a question that cannot be answered by an external instrument but only through informed internal deliberation.

Hofstede's (1980, 2001) cross-cultural research extended culture theory beyond the organisational level, demonstrating that national and regional cultural dimensions — power distance, individualism, uncertainty avoidance, long-term orientation — shape organisational culture in ways that resist simple prescription. An intervention that produces honest dialogue in a low power distance culture may produce silence or performance in a high power distance one. This contextual sensitivity has significant implications for any culture change methodology that aspires to cross-cultural applicability.

Weick's (1995) sensemaking framework offered a processual alternative to the structural models of Schein and Quinn, proposing that culture is not a property that organisations have but a process that organisations do — an ongoing collective activity of meaning-making through which members interpret their experience and coordinate their behaviour. For Weick, culture change is not a matter of altering a structure but of interrupting and redirecting a process. This framing has direct relevance to the methodology described in this paper. The card sort is, in Weick's terms, a structured sensemaking event — a deliberately designed interruption of the normal meaning-making process that creates the conditions for a different kind of collective interpretation to emerge.

Martin's (1992, 2002) cultural complexity perspective challenged the assumption implicit in most culture frameworks — that organisations have a single, coherent culture that can be measured and managed. Martin identified three perspectives through which culture can be simultaneously understood: the integration perspective, which sees culture as shared and coherent; the differentiation perspective, which sees culture as fragmented along subgroup lines; and the fragmentation perspective, which sees culture as ambiguous and context-dependent. Martin's work has important implications for culture measurement — an instrument that aggregates responses across an organisation may produce a coherent profile that masks significant subgroup variation. This observation anticipates the hierarchical perception gap phenomenon described in Section 6 of this paper.

Alvesson (2002, 2013) offered a critical perspective on the culture management project itself, arguing that the managerial appropriation of culture as a lever for organisational control represents a form of ideological power — an attempt to shape not just what employees do but what they think and feel. This critique has particular relevance to the methodology described in this paper, which takes an explicitly non-managerial stance. The Culture Science Cards are not deployed to install a desired culture determined by leadership. They are deployed to surface the culture that members collectively experience and to facilitate collective deliberation about the culture they collectively want. The distinction — between culture as managerial project and culture as collective self-determination — is theoretically significant.

Bourdieu's (1977, 1990) concept of habitus offers perhaps the most penetrating theoretical account of why culture change is hard. Habitus — the system of durable, transposable dispositions that individuals acquire through socialisation and that generate and organise practices — operates below the level of conscious awareness. It is not a set of rules that people follow but a set of orientations that shape perception, judgment, and action without deliberate intention. Culture, in Bourdieu's terms, is largely habitus — and habitus does not change through instruction, prescription, or survey feedback. It changes through sustained experience of different conditions over time. This insight counsels against any expectation of rapid transformation and points toward the importance of environmental redesign over attitudinal intervention — fully consistent with the behaviour-first framework proposed in this paper.

2.2 The Culture Change Problem

If the theoretical consensus on what organisational culture is has remained relatively stable since Schein's foundational work, the consensus on how to change it is considerably less settled — and the empirical record is sobering. Kotter (1995) estimated that seventy percent of major change initiatives fail to achieve their stated objectives. Beer and Nohria (2000) put the failure rate for corporate transformation programmes at a similar level. More recent meta-analyses have not substantially revised these figures (Burnes, 2011; By, 2005). The culture change problem is not a new problem. It is a persistent one that the field's most widely deployed solutions have not solved.

The reasons for this persistence are multiple and have been extensively documented. Kotter and Heskett (1992) demonstrated that culture change requires sustained leadership commitment over periods measured in years rather than months — a requirement that sits uneasily with the short-term pressures that drive most organisational decision-making. Argyris (1990, 1993) identified the organisational defensive routines that protect existing cultural patterns from genuine examination — the skilled incompetence through which organisations simultaneously acknowledge problems and prevent their resolution. Senge (1990) described the systemic structures that produce the very behaviours organisations most want to change, and the futility of attempting to change behaviour without changing the systems that produce it.

What is less well documented — and what this paper specifically addresses — is the extent to which the dominant instruments of culture change are structurally misaligned with the mechanisms of change. The survey paradigm, in particular, contains an inherent contradiction. It asks individuals to report on collective phenomena — the culture of the organisation — using individual response formats. It aggregates those individual reports into organisational profiles. It presents those profiles back to the organisation as diagnostic findings. And it then invites the organisation to change in directions the diagnostic has identified.

Each step in this sequence contains assumptions that behavioural science has found reason to question. Individual self-report is subject to social desirability bias, anchoring, and the fundamental attribution error (Ross, 1977). Aggregation of individual responses loses the social and relational texture of cultural phenomena. Diagnostic feedback activates defensive responses that protect existing patterns rather than opening them to examination (Argyris, 1990). And prescription without ownership produces compliance at best — never the intrinsic commitment that genuine culture change requires (Deci and Ryan, 1985).

The aspiration gap — the distance between stated organisational values and lived behavioural reality — is perhaps the most visible symptom of this structural misalignment. Organisations consistently report espousing values — collaboration, innovation, psychological safety, empowerment — that their actual behavioural environment systematically undermines. The survey instruments most commonly used to measure culture are well-positioned to identify this gap at the aggregate level. They are poorly positioned to produce the conditions under which groups can honestly examine it, collectively own it, and design their way out of it.

This paper argues that the solution is not a better survey. It is a different kind of intervention altogether — one that works at the level of behaviour rather than attitude, through dialogue rather than measurement, and that produces collective ownership rather than diagnostic insight. The theoretical foundations for such an intervention are examined in the following sub-sections.

2.3 Behavioural Economics and Organisational Behaviour

The application of behavioural economics to organisational behaviour has produced some of the most practically significant insights in management science over the past three decades. Drawing on the foundational work of Kahneman and Tversky (1979) on cognitive biases and heuristics, and developed in the organisational context by scholars including Thaler and Sunstein (2008), Ariely (2008), and Heath and Heath (2010), behavioural economics offers a systematic account of why people in organisations consistently behave in ways that contradict their stated values and rational self-interest.

Kahneman's (2011) dual process theory — the distinction between fast, intuitive System 1 thinking and slow, deliberate System 2 thinking — has particular relevance for culture change methodology. Most organisational interactions activate System 1 processing: habitual responses to familiar situations, shaped by the behavioural environment in ways that are largely below conscious awareness. Culture change, insofar as it requires people to examine and revise their habitual responses, requires System 2 activation — the kind of slow, deliberate, effortful thinking that does not occur spontaneously in the flow of normal organisational life.

Thaler and Sunstein's (2008) choice architecture framework extends this insight to design: if behaviour is primarily a function of the environment in which choices are made, then changing behaviour requires changing the choice environment — what Thaler and Sunstein term the nudge. This reframing has profound implications for culture change. The question is not how to convince people to behave differently, but how to design the conditions in which different behaviour becomes the path of least resistance. The Culture Science Cards methodology is, in these terms, an exercise in choice architecture — the deliberate design of a conversation environment in which honest cultural self-assessment becomes more likely than social performance.

Duhigg's (2012) account of habit formation — the cue-routine-reward loop through which behaviours become automatic — provides a mechanism for understanding both why organisational culture is resistant to change and how change can be produced. Below-the-line behaviours — avoidance, conformity, approval-seeking, micromanagement — are not moral failures. They are habits, triggered by environmental cues and reinforced by organisational rewards, often invisible to the people who enact them. Changing them requires not persuasion but the redesign of the cue-routine-reward loop — which is precisely what the design phase of the Envision-Diagnose-Design sequence is intended to produce.

Gollwitzer's (1999) implementation intentions research demonstrated that the gap between intention and behaviour can be substantially reduced through specific if-then planning: not 'I will be more collaborative' but 'when situation X occurs, I will do Y.' This finding has direct implications for how the design phase of the methodology should be conducted — and for why the vague aspiration produced by values alignment exercises fails to produce behaviour change where the specific behavioural commitments produced by the card sort's design phase have a better chance of succeeding.

Cialdini's (1984) principles of influence — reciprocity, social proof, authority, liking, scarcity, and commitment — provide additional theoretical resources for understanding the social dynamics of the card sort. The physical transfer of a card activates the reciprocity norm: something has been given, something is owed in return. The public placement of a card activates the commitment and consistency principle: having publicly taken a position, people are motivated to maintain it. These

social mechanisms operate within the card sort to produce engagement and commitment that purely cognitive or verbal processes cannot reliably generate.

2.4 Gamification in Organisational Contexts

Gamification — the application of game design elements to non-game contexts — has attracted substantial academic and practitioner interest since Deterding et al.'s (2011) foundational definition. The field's early focus on points, badges, and leaderboards as engagement mechanisms has given way to a more nuanced understanding of the psychological mechanisms through which game elements produce their effects (Hamari, Koivisto and Sarsa, 2014; Seaborn and Fels, 2015). For the purposes of this paper, three aspects of gamification theory are particularly relevant: the role of structured constraint in enabling rather than limiting expression; the function of forced interaction mechanics in producing participation; and the relationship between game structures and intrinsic motivation.

McGonigal (2011) argued that games produce engagement because they offer voluntary participation in unnecessarily difficult challenges — a definition that captures something important about why the card sort works. The above/below the line binary, the requirement to place every card without leaving any in the middle, the turn-based dealing structure — these are constraints that, paradoxically, enable rather than limit expression. By removing the infinite degrees of freedom that characterise open conversation, they make the conversation producible. The constraint is the structure. The structure is what makes honesty safe.

Csikszentmihalyi's (1990) concept of flow — the state of optimal engagement produced when challenge and skill are in balance — provides a theoretical account of the quality of attention that effective gamified interventions can produce. The card sort, when well facilitated, produces something close to flow conditions: clear goals (place every card), immediate feedback (the group's response to each placement), concentration without self-consciousness (the card as focus of attention rather than the participant's performance). The result is a quality of engagement that normal organisational meetings rarely produce.

Przybylski, Rigby and Ryan (2010) examined the relationship between game structures and basic psychological needs — autonomy, competence, and relatedness — drawing on self-determination theory (Deci and Ryan, 1985). Their finding that games satisfy these needs through structural features rather than extrinsic rewards has direct implications for the card sort methodology. The dealing mechanism satisfies the need for autonomy — every participant has genuine agency over their card's placement. The anchoring questions satisfy the need for competence — every participant has a framework for engaging meaningfully with every card. The group discussion satisfies the need for relatedness — the card is a shared object around which genuine interpersonal engagement occurs. These three need satisfactions, produced by structural features of the methodology rather than by facilitation skill, account in part for the consistent engagement levels observed across sessions.

It is important to distinguish the gamification described in this paper from the superficial gamification — points, badges, leaderboards — that has attracted justified criticism in the organisational literature (Bogost, 2011; Fuchs, 2014). The Culture Science Cards do not reward participation with extrinsic incentives. They produce intrinsic engagement through the structural conditions described above. This distinction matters for the paper's theoretical argument: the methodology is

not gamified in the sense of having game elements added to it. It is gamified in the deeper sense of being structured according to game design principles that produce the psychological conditions for honest and productive engagement.

2.5 Semiotics, Material Culture, and Embodied Cognition

The theoretical case for the physical card as a distinct epistemic tool — rather than simply a convenient way to display information — requires engagement with three converging theoretical traditions: semiotics, material culture theory, and embodied cognition.

Peirce's (1931-1958) semiotic framework distinguishes between the sign, the object, and the interpretant — the meaning produced in the mind of the sign's receiver. A behavioural descriptor printed on a card is not a fixed meaning but a sign that each receiver interprets through their own experience. Wittgenstein's (1953) related argument that meaning is use — that words mean what they do in the contexts in which they are used — has particular relevance for the card sort's interpretive freedom design element. When a participant interprets a card differently from its intended meaning, they are not misusing it. They are producing the interpretant that their experience of their organisation generates. That interpretant is cultural data more valuable than any fixed-meaning survey response.

Material culture theory — drawing on Appadurai (1986), Miller (1987), and Latour (1987, 2005) — argues that objects are not passive carriers of meaning but active participants in social life. Latour's actor-network theory, in particular, attributes agency to non-human actors — the capacity to make a difference in a network of relations. The card, in these terms, is not simply a prompt for human conversation. It is an actor that changes the social dynamics of the room. It distributes attention, provides a neutral focus for contested positions, mediates between participants, and enables the expression of views that would be socially impossible without it. This theoretical account of the card as social actor goes considerably beyond its surface function as an information display.

Lakoff and Johnson's (1999) embodied cognition framework argues that thinking is not purely abstract but grounded in physical experience — that the body's engagement with the physical world shapes the conceptual structures through which we understand it. The act of holding a card, turning it over, reading it, discussing it, and placing it is not a neutral information-processing event. It engages the body in the cognitive process in a way that produces different quality thinking than visual or verbal engagement alone. This claim is supported by a growing body of research demonstrating that physical manipulation of objects enhances cognitive engagement, improves memory, and produces more nuanced judgments than screen-based equivalents (Pouw, Van Gog and Paas, 2014; Alibali and Nathan, 2012).

The face-down card mechanic — in which participants hold their cards face down until the moment of engagement — deserves specific theoretical attention. In improvisational theatre, an offer is a moment when something new enters the space requiring genuine response rather than prepared reaction. The face-down card is an offer in this precise sense. The participant cannot prepare for it. The moment of reveal is a moment of genuine discovery — shared simultaneously by the holder and the group. This micro-experience of novelty activates the curiosity and attention that optimal learning conditions require (Berlyne, 1966; Loewenstein, 1994). The design is not accidental. It is a deliberately engineered epistemic condition.

2.6 Psychological Safety

Edmondson's (1999) foundational research on psychological safety — the shared belief that the team is safe for interpersonal risk-taking — identified it as the single strongest predictor of team learning behaviour. Subsequent research has confirmed and extended this finding across a wide range of organisational contexts (Edmondson and Lei, 2014; Frazier et al., 2017), and the construct has gained considerable popular attention through Google's Project Aristotle research, which identified psychological safety as the most important factor in team effectiveness (Rozovsky, 2015).

The standard approach to building psychological safety in facilitation contexts relies on relational skill — the facilitator's ability to create a warm, non-judgmental atmosphere through interpersonal warmth, active listening, and careful management of group dynamics. This approach is effective when the facilitator is skilled and consistent, but it is fragile — dependent on the facilitator's moment-to-moment performance and vulnerable to the inevitable asymmetries of skill, style, and context that characterise real facilitation practice.

The Culture Science Cards methodology takes a different approach. It builds psychological safety into the structure of the intervention rather than depending on the facilitator to create it interpersonally. The absence of correct answers means that there is no evaluative threat — no possibility of being wrong. The dealing mechanism means that participation is structurally required rather than voluntarily offered — removing the social risk of speaking up. The card as focus of discussion means that challenging views can be attached to an object rather than to a person — reducing the interpersonal exposure that honest expression in groups normally involves. These structural features produce psychological safety architecturally — as a designed property of the intervention rather than an emergent property of the facilitator's skill.

This architectural approach to psychological safety has theoretical implications beyond the methodology described in this paper. It suggests that psychological safety need not be solely a relational phenomenon — that it can be designed into intervention structures in ways that reduce the skill dependency and increase the consistency of its production. This is a proposition with significant implications for how facilitation training and certification are understood — implications explored further in Section 7.

Goffman's (1959) dramaturgical framework — the analysis of social interaction as performance — provides additional theoretical context for understanding what psychological safety enables in the card sort. In Goffman's terms, normal organisational interaction is characterised by impression management: the strategic presentation of self designed to maintain a desired identity in the eyes of others. The card sort disrupts this performance through the structural features described above. The no-right-or-wrong architecture removes the evaluative stakes that normally motivate impression management. The dealing mechanism removes the strategic control over which topics to engage with. The card as object removes the direct personal exposure of having to voice a challenging view without a mediating artefact. The result is a reduction in performance and an increase in authentic expression — the condition that Goffman would recognise as a breach in the normal front stage, enabling backstage reality to become visible.

2.7 The Ikea Effect and Psychological Ownership

Norton, Mochon and Ariely (2012) demonstrated in a series of elegant experiments that people place disproportionately higher value on things they have partially created themselves — a phe-

nomenon they termed the Ikea Effect after the flat-pack furniture company whose products require assembly by the purchaser. The key finding was that labour investment in an object's creation produces valuation independent of the object's objective quality — that the act of making something is itself the source of its value to its maker.

Pierce, Kostova and Dirks (2003) provided a more comprehensive theoretical account of psychological ownership — the feeling that something is mine — identifying three routes through which it develops: control over the object, intimate knowledge of it, and investment of self in it. Their research demonstrated that psychological ownership produces significantly higher commitment to outcomes than formal ownership or assigned responsibility — a finding with obvious implications for how culture change interventions should be designed.

The Culture Science Cards methodology produces all three routes to psychological ownership simultaneously for every participant. Control is exercised through the placement authority that each card holder holds and the consensual negotiation process through which placements are confirmed. Intimate knowledge is produced through the anchoring questions that require every participant to examine every card from multiple perspectives before placement. Investment of self occurs through the dealing mechanism and placement authority that make every participant a genuine contributor to the map's construction.

Norton et al.'s original research was conducted at the individual level. The card sort methodology produces what this paper terms a collective Ikea Effect — a group-level analogue of the individual phenomenon in which the culture map built together by a group is valued more highly than any externally produced equivalent. This collective extension of the Ikea Effect has not been formally documented in the literature and represents both a theoretical proposition and an empirical claim requiring formal investigation. The observational evidence supporting this claim is presented in Section 5.

Cooperrider and Srivastva's (1987) Appreciative Inquiry framework provides a complementary perspective. Their demonstration that organisations move in the direction of what they study — that studying problems produces better problem identification while studying success produces better success — supports the envisioning-first design of the card sort methodology. Starting with the ideal culture rather than the dysfunctional one directs collective energy toward possibility rather than problem, producing the generative dynamic that the Envision-Diagnose-Design sequence depends on.

2.8 The Theoretical Gap

The preceding review has traversed organisational culture theory, the culture change problem, behavioural economics, gamification, semiotics and embodied cognition, psychological safety, and the Ikea Effect and psychological ownership. Each tradition has contributed partial insights into the challenge of producing genuine, sustained organisational culture change. None has synthesised them into a coherent methodology.

The gap this paper addresses is precisely this synthesis. Schein identified the level at which culture change must operate but did not specify the intervention mechanism through which it could be reached. Weick described culture as a sensemaking process that could be interrupted and redirected but did not design the interruption. Edmondson identified psychological safety as the prerequisite for honest group expression but relied on relational facilitation to create it. Thaler and

Sunstein demonstrated that choice architecture could change behaviour without changing minds but did not apply their insight to the culture change context. Norton et al. showed that self-creation produces disproportionate commitment but studied it at the individual level only. Cooperrider and Srivastva demonstrated the power of appreciative inquiry but did not give groups the behavioural vocabulary to move from vision to specific design.

The Culture Science Cards methodology synthesises these partial insights into a coherent intervention. It operates at the level of basic assumptions by making behaviour — rather than attitude or value — the unit of analysis. It interrupts the normal sensemaking process through a structured gamified dialogue. It builds psychological safety architecturally into the intervention structure rather than depending on relational facilitation. It applies choice architecture principles to the design of a culture conversation. It produces a collective Ikea Effect through the structural conditions of its co-construction process. And it gives groups the specific behavioural vocabulary they need to move from envisioning the ideal to designing toward it. The theoretical integration that produces this synthesis is described in Section 3.

3. Theoretical Framework

3.1 The Four Pillars

The Culture Science Cards methodology is grounded in four theoretical traditions whose convergence, this paper argues, produces a framework for culture change that is more consistent with what behavioural science tells us about how humans actually change than the measurement-prescription paradigm that currently dominates the field. These four traditions — constructivism, behavioural economics, semiotics, and gamified dialogue design — are not independently applied to the methodology. They intersect and reinforce each other in ways that produce emergent effects greater than any single tradition would predict.

3.1.1 Constructivism

Constructivist learning theory, originating in the work of Piaget (1954) and developed by Vygotsky (1978), Bruner (1966), and others, holds that knowledge is not transmitted from an external authority to a passive receiver but constructed by the learner through active engagement with experience. People do not learn by being told. They learn by doing, by testing, by discussing, and by building mental models through repeated engagement with complex phenomena.

In the culture change context, constructivism challenges the assumption that diagnostic feedback — telling people what their culture is — produces understanding sufficient to motivate change. Understanding of one's own culture is not a fact that can be delivered in a report. It is a construction that must be built through active engagement with the evidence of one's own experience, in dialogue with others who share that experience. The card sort is a constructivist intervention: it does not tell participants what their culture is. It creates the conditions through which participants construct that understanding themselves, in dialogue, from the raw material of their own observation and experience.

Vygotsky's zone of proximal development — the space between what a learner can achieve independently and what they can achieve with skilled support — has particular relevance for the facilitation role in the methodology. The facilitator does not provide answers. They scaffold the group's

own construction of understanding — asking questions that extend the group's thinking into its proximal zone, holding the structural conditions that make deeper engagement possible, and reflecting back the cultural disclosures that the group produces in ways that help the group recognise their significance.

3.1.2 Behavioural Economics

The behavioural economics tradition's central contribution to the methodology is its insistence that behaviour is primarily a function of context rather than character. The most important implication of this insight for culture change is that the question 'how do we get people to behave differently?' is the wrong question. The right question is 'what in the environment is currently making the existing behaviour the path of least resistance, and what would need to change for the desired behaviour to become easier?'

This reframing — from character to context, from persuasion to design — is the foundation of the methodology's design phase. When a group has envisioned its ideal culture, diagnosed the gap between that ideal and current reality, and identified which behaviours are most absent, the design question is not 'how do we motivate people to practice these behaviours?' It is 'what systemic, structural, or conversational changes would make these behaviours more likely to occur naturally?' This question produces a different kind of answer — specific, environmental, testable — than the motivational interventions that culture change programmes typically prescribe.

3.1.3 Semiotics

Semiotic theory's contribution to the methodology is its account of how meaning is made through signs — and specifically, how a physical object can carry and produce meaning in ways that differ fundamentally from verbal or digital communication. The card is a sign in Peirce's (1931-1958) sense: a physical thing that stands for something else in the mind of its interpreter. But unlike a survey item — which is designed to produce a fixed meaning — the card is designed to produce interpretant variation. Different participants interpret the same card differently because their experience of their organisation is different. Those different interpretations are not errors to be corrected. They are the primary data of the card sort.

This semiotic design principle — the card as a sign whose meaning is deliberately left open to interpretation — is what distinguishes the methodology from all forms of diagnostic measurement. A measurement instrument aims for inter-rater reliability: every respondent should interpret every item in the same way. A dialogue instrument aims for interpretive richness: every participant should bring their own experience to bear on every card, producing the diversity of perspective that makes the dialogue productive. These are opposite design goals, and they produce opposite outcomes.

3.1.4 Gamified Dialogue Design

Gamified dialogue design — the application of game design principles to structured conversation — is the fourth theoretical pillar of the framework. It contributes the insight that constraints can enable rather than limit expression: that a well-designed game structure can produce more honest, more engaged, and more productive conversation than an open, unconstrained discussion.

The specific game design elements in the methodology — the dealing mechanism, the above/below binary, the forced placement of every card, the turn-based structure — are not arbitrary. Each is designed to produce a specific psychological effect. The dealing mechanism distributes power and

mandates participation. The above/below binary forces judgment while the anchoring questions slow it down. The forced placement of every card prevents avoidance. The turn-based structure prevents dominance and ensures every voice is heard. Together, these elements constitute a game whose rules produce the conditions for the kind of honest, generative dialogue that culture change requires.

3.2 The Behaviour-First Inversion

The central theoretical proposition of this paper is a reversal of the standard assumption about the relationship between behaviour and belief in organisational culture change. The standard assumption — implicit in the dominant measurement-prescription paradigm — is that change proceeds from the inside out: change beliefs and values, and behaviour will follow. This paper proposes the opposite: that in the context of organisational culture, sustained behaviour change produces belief change, not the reverse.

This proposition is not novel at the level of individual psychology. Bem's (1967) self-perception theory argued that people infer their attitudes from their behaviour rather than the reverse — that we discover what we believe by observing what we do. Festinger's (1957) cognitive dissonance theory demonstrated that behaviour inconsistent with existing beliefs produces psychological pressure to revise those beliefs — that acting differently eventually produces thinking differently. James's (1890) radical pragmatist position — that acting as if something were true is often the most effective route to believing it — anticipates the same insight.

What has not been fully worked out is the organisational application of this inversion. If individual belief change follows behaviour change, then the implication for organisational culture change is that the intervention target should be behaviour — specifically, the environmental conditions that make desired behaviour the path of least resistance — rather than attitude. The culture conversation that the card sort produces is valuable not primarily as a mechanism for changing minds but as a mechanism for producing the collective behavioural commitments that, when enacted, will eventually change the culture. The beliefs will follow.

This inversion has a further implication for how culture change is evaluated. If the standard is belief change — measured by survey — then culture change will always appear slower and less complete than it is, because beliefs lag behind behaviour. If the standard is behavioural change — measured by the specific practices identified in the design phase and tracked across sessions — then progress is visible earlier, more concretely, and in the terms that most matter for organisational performance.

3.3 The Envision-Diagnose-Design Sequence

The Envision-Diagnose-Design sequence is the emergent methodology that five years of practitioner inquiry produced. It was not designed in advance. It was discovered through practice — specifically, through the consistent observation that groups asked 'What behaviours are required in this team for you and your teammates to perform at their best?' did not stop at answering that question but moved spontaneously into diagnosing the gap between what they had described and what they were actually experiencing, and then into designing the environmental changes that would close it. This emergent quality is theoretically significant: it suggests that the sequence is aligned with

something fundamental about how groups naturally process culture change when given the right tools and conditions.

The envisioning phase serves a function that extends beyond the production of an aspirational culture map. It generates the psychological conditions that make the diagnostic and design phases possible. When a group has collectively built a picture of the culture they want — in specific behavioural terms, through a process that every participant has genuinely contributed to — the diagnostic question 'where are we falling short?' is no longer threatening. It is navigational. The group is not being asked to criticise themselves. They are being asked to identify the distance between where they are and somewhere they have already agreed they want to go.

The diagnostic phase, in the Envision-Diagnose-Design sequence, is not the primary intervention. It is the bridge between aspiration and action. Its function is to make the aspiration gap concrete and specific — to identify, in behavioural terms, exactly which practices are most absent from the culture the group has envisioned. The cards that show the largest gap between aspiration and current reality are not problems to be solved. They are priorities to be designed toward.

The design phase is where the methodology most clearly distinguishes itself from the culture conversation that most interventions produce and mistake for culture change. A conversation about culture, however honest and however well-facilitated, does not change culture. What changes culture is the redesign of the environmental conditions that produce it — the specific changes to systems, habits, structures, and conversations that make the desired behaviours more likely to occur naturally. The design phase of the card sort is explicitly oriented toward this environmental redesign, informed by the behavioural economics insight that context, not character, drives behaviour.

The multi-session evolution of the methodology — from single sessions to extended engagements across weeks and months — reflects the recognition that the Envision-Diagnose-Design sequence is not a one-time event but an iterative cycle. Culture change is not produced in a workshop. It is produced by sustained attention to behaviour over time, with the card sort providing the recurring structure for that attention — a visible record of cultural movement that groups can point to, interrogate, and build on.

4. The Culture Science Cards Methodology

4.1 The Sixteen-Theme Behavioural Taxonomy

The Culture Science Cards deck consists of eighty facilitation cards organised into sixteen behavioural themes, each containing five cards. The sixteen themes span the full spectrum of constructive, passive-defensive, and aggressive-defensive cultural orientations, drawn from the foundational theoretical traditions in organisational psychology rather than from any single proprietary framework. The themes are: Goal Directed, Dependent, Creative, Conventional, Authentic, Validating, Confident, Fearful, Supportive, Critical, Collaborative, Competitive, Controlling, Empowering, Empathetic, and Demanding.

Each card carries a short behavioural descriptor — a specific, observable behaviour expressed in plain language. The descriptors range from clearly constructive ('seek out feedback,' 'help people grow and develop,' 'be honest even when it is uncomfortable') through ambiguous ('never settle for

good enough,' 'question decisions made by others,' 'be seen and noticed') to clearly limiting ('keep control of everything,' 'push decisions up,' 'avoid conflict at all costs'). This range is deliberate. The clearly constructive and limiting cards serve an anchoring function — they establish the poles of the spectrum and build early consensus that warms the group for harder conversations. The ambiguous cards are the methodology's most productive instruments: their above or below the line placement will genuinely divide rooms, producing the honest dialogue that culture change requires.

The design principle governing the ambiguous cards is what the methodology terms productive ambiguity. A card is productively ambiguous when it has at least one credible argument on each side of the above/below line — when reasonable people with different organisational experiences could place it differently and defend their placement. Cards that generate unanimous easy agreement are not weak cards. As discussed in Section 5, they are often the most powerful cards in the deck — not because of the placement debate they produce but because of the aspiration gap conversation they enable. The question that follows unanimous above-the-line placement — 'interesting; so why aren't we doing it?' — is often the most significant conversation of the session.

4.2 The Structured Epistemic Equality Framework

The Structured Epistemic Equality Framework describes the six structural elements of the methodology that together produce its distinctive effects. Each element has a specific theoretical function. Together, they constitute a methodology that is not dependent on facilitation skill for its core effects — though skilled facilitation significantly enhances them — but produces those effects architecturally, through the design of the intervention structure itself.

4.2.1 The Absence of Correct Answers

The most fundamental structural feature of the methodology is the absence of evaluatively correct answers. No placement is right or wrong. The above/below line is not a scale with objective scores. It is a shared frame for a collective conversation about which behaviours the group believes serve it and which limit it. This absence of evaluation is not incidental. It is the foundational psychological safety condition on which everything else depends.

Edmondson (1999) established that the belief that one will not be punished or humiliated for speaking up is the prerequisite for team learning behaviour. The no-right-or-wrong architecture instantiates this belief structurally rather than relationally. It is not the facilitator's warmth that makes the space safe. It is the design of the space itself. This architectural approach to psychological safety has the significant practical advantage of consistency: it works regardless of the facilitator's interpersonal skill, regardless of the hierarchical composition of the group, and regardless of the organisational context.

4.2.2 Interpretive Freedom

Participants are explicitly invited to engage with each card in terms of their own experience. If a card means something specific to them in their organisational context — if 'never relinquish control' brings to mind a particular leadership pattern, or 'be everyone's friend' describes a specific cultural dynamic — that specific meaning is the right meaning for that participant in that session. There is no authoritative interpretation to defer to.

This interpretive freedom converts the card from a fixed stimulus into a projective surface — what psychologists in the tradition of Murray (1943) would recognise as a thematic apperception instrument. The participant's interpretation of the card reveals more about their cultural experience than any designed-response survey item could, precisely because it is unscripted. The diversity of interpretations that a single card can produce across a group is itself a cultural datum: it reveals the extent to which a shared vocabulary of behaviour does or does not exist within the organisation.

4.2.3 The Two Anchoring Questions

Central to the methodology are two anchoring questions applied to each card before placement: 'What value might this behaviour bring to our group?' and 'What constraints might this behaviour introduce to group practice?' These questions serve multiple simultaneous functions. They activate deliberate rather than intuitive processing, consistent with Kahneman's (2011) dual process theory. They require participants to hold competing perspectives before reaching judgment, reducing the confirmation bias that single-perspective assessment produces. They transform apparently obvious card choices into productive conversations: a behaviour that seems unambiguously positive reveals its shadow when its constraints are examined; a behaviour that seems clearly limiting reveals its context-dependent value when its benefits are considered.

Most significantly, the dual-perspective forcing function creates the conditions under which the aspiration gap surfaces organically. Having articulated the value of a behaviour, participants naturally and without prompting begin to examine whether that value is present in their current culture. The gap between the argument they have just made and their lived experience becomes audible — not because the facilitator has asked them to identify problems, but because the structure of the inquiry has made honest comparison inevitable. The aspiration gap does not need to be excavated. It rises to the surface when the conditions are right.

4.2.4 Facilitator Content Discipline

The facilitator's role in the card sort is explicitly not to contribute content. They do not share their own view of where a card belongs. They do not correct misinterpretations. They do not resolve disagreements by providing the authoritative answer. Their role is structural — to maintain the conditions of the framework — and meta-level: to listen for the cultural disclosures that emerge in how the group discusses the cards, and to hold those disclosures for later exploration.

The comments that most reward this meta-level listening are not the explicit analytical observations but the incidental asides: 'yeah but we don't actually do that here,' 'we do too much of this,' 'this is exactly what happened in last Tuesday's meeting.' These are the moments at which the culture speaks about itself — unguarded, specific, and actionable. A facilitator engaged in content discussion would miss them. A facilitator listening at the meta level catches them, notes them, and returns to them at the appropriate moment in the session.

The discipline of non-intervention extends to process variations as well as content. When a participant begins dealing multiple cards simultaneously — impatient with the pace — the facilitator does not correct them. The group has been given the instructions. Once the session begins, the process belongs to the group. The facilitator's response is reflective rather than corrective: what in the setup created the conditions for impatience, and how might the instructions be framed differently to increase the likelihood of the desired pace in future sessions? This reflective stance is consistent with Schön's (1983) account of the reflective practitioner — the practitioner who generates knowledge from practice by treating their own sessions as data.

4.2.5 The Dealing Mechanism

Cards are distributed one at a time around the full group sequentially, face down. This dealing mechanism serves multiple theoretical functions simultaneously. It randomises engagement, preventing the strategic selection of cards that would occur if participants chose their own. It mandates participation — every participant receives a card and is structurally required to engage with it. It temporarily suspends the social hierarchy that normally governs who speaks first, for how long, and about what — creating what this paper terms structural epistemic equality.

In most organisational group settings, power determines voice. Senior people speak first. Their framing anchors subsequent discussion. Everyone else calibrates their contribution against what the most powerful person has already said. The dealing mechanism disrupts this dynamic entirely. The CEO receives a card. The graduate receives a card. The card does not know its holder's title, and the sequence of engagement is determined by the deal, not by seniority. This temporary suspension of the organisational hierarchy is one of the methodology's most powerful effects — and one of its most consistent observations across sessions.

The cards are held face down until the moment of engagement. This prevents preparation and eliminates the social comparison that occurs when participants can see each other's cards in advance. It also engineers a moment of genuine discovery at the reveal — the shared experience of seeing the card for the first time creates a micro-event of joint attention that activates curiosity and engagement before the analytical process begins. The face-down mechanic is attentional architecture: the physical arrangement of objects directing cognitive focus without verbal instruction.

The physical transfer of the card from dealer to recipient activates what Cialdini (1984) identified as the reciprocity norm: something has been given, something is owed in return. This social mechanism, operating largely below the level of conscious awareness, contributes to the consistent engagement levels observed across sessions. The card arrives as a gift — small but real — and the social norm of reciprocity produces an obligation to engage with it that purely verbal prompts do not reliably generate.

4.2.6 Consensual Placement Negotiation

When a card holder places a card against the apparent consensus of the group, the group's typical response reveals the depth of the methodology's social architecture. Rather than overriding the placement or appealing to the facilitator, groups characteristically re-offer their perspective as an invitation — acknowledging the possibility that their reasoning was insufficiently communicated — and seek explicit consent before moving the card. The pattern is recognisable: 'I'm not sure you understood our perspective — we think it goes here — is that okay?'

This pattern instantiates what Habermas (1984) termed the ideal speech situation — agreement reached through the force of the better argument rather than through coercion, status, or power. The card holder's autonomy is never structurally removed. The 'is that okay?' is a genuine question, not a rhetorical one. The result is that every placement in the final culture map has been consensually negotiated — a condition that produces the psychological ownership that transforms insight into commitment.

Cards may also be reworked after initial placement as discussion continues. This rework is not a sign of indecision. It is evidence that the methodology is working — that new perspective is genuinely changing positions, that the group is thinking together rather than performing con-

sensus. Cards that the group finds too complex for immediate resolution are placed in a central holding area and returned to at the close of the session, when trust and context have been established and the group is better equipped to engage with their complexity.

4.3 The Collective Ikea Effect

The six structural elements of the Structured Epistemic Equality Framework produce, as their emergent collective outcome, a group-level analogue of the Ikea Effect described by Norton, Mochon and Ariely (2012). Every participant has exercised control over the map's construction through the placement authority and consensual negotiation process. Every participant has developed intimate knowledge of every card through the anchoring questions. Every participant has invested something of themselves in the outcome through the dealing mechanism and placement authority. The result is a culture map that the group has genuinely built — and therefore values and feels responsible for in a way that no externally produced diagnostic could produce.

This collective Ikea Effect is the primary mechanism through which the methodology produces behavioural commitment where diagnostic reporting does not. The organisation that receives a culture survey report has been given a product. The group that produces a culture map through the card sort has built something. The psychological distance between these two experiences is the distance between compliance and commitment — and it is the distance that most culture change programmes fail to cross.

5. Qualitative Findings

5.1 Methodology of Inquiry

The findings presented in this section were generated through systematic practitioner inquiry drawing on two distinct bodies of experience. The first comprises hundreds of sessions using conventional diagnostic and measurement instruments across thousands of participants over a number of years — experience that produced consistent observations about the limitations of the measurement-prescription paradigm described in Section 2.2. The second comprises more than fifty facilitated card sort sessions across more than fifty organisations and two thousand participants over a five-year period. Organisations represented in the dataset include corporations, government departments, schools, kura, and non-profit organisations across New Zealand and internationally. Sessions ranged from single ninety-minute workshops to extended multi-session engagements across weeks and months. The findings reported here draw specifically on the second body of experience, informed throughout by the contrast with the first.

In keeping with the practitioner-inquiry tradition (Reason and Bradbury, 2008; Schön, 1983), observations were generated through systematic reflective practice rather than formal data collection protocols. The author served simultaneously as methodology developer, facilitator, and observer — a positionality that carries both the advantage of deep contextual knowledge and the limitation of potential confirmation bias. These limitations are acknowledged and inform the future research agenda proposed in Section 6. The findings are presented as consistent phenomenological patterns observed across independent groups in diverse contexts — patterns whose consistency across that diversity is the primary basis for their theoretical significance.

5.2 The Collapse of Pluralistic Ignorance

One of the most consistent observations across sessions is the speed with which pluralistic ignorance collapses once the card sort begins. Pluralistic ignorance — Allport's (1924) term for the condition in which every member of a group privately holds a view that differs from what they believe the group norm to be — is a pervasive feature of organisational life. It is the mechanism through which obviously dysfunctional cultural patterns are maintained: everyone privately knows the culture is problematic, but everyone assumes that everyone else is fine with it, so no one says so.

The card sort disrupts this mechanism through its structural features. When the dealing mechanism distributes cards without regard to seniority, and the no-right-or-wrong architecture removes the evaluative risk of honest placement, participants begin to express privately-held views that they had assumed were minority positions. The discovery that these views are widely shared — that the card they had hesitantly placed below the line is placed there by participant after participant around the table — produces a visible and often emotional response. It is not unusual for participants to say, in some form, 'I thought it was just me.'

This collapse of pluralistic ignorance is not only psychologically significant. It is diagnostically significant. When multiple independent groups within the same organisation, working simultaneously on different tables, produce nearly identical culture maps — converging on the same cards, the same themes, the same patterns — this convergence is evidence of a systemic cultural pattern, not an idiosyncratic group response. The observation that different tables often select the same cards, especially when the organisation has a strong cultural pattern, recurred consistently across organisations of very different types and sizes.

5.3 Progressive Disclosure

A second consistent observation is the phenomenon of progressive disclosure — the movement from safe, aspirational engagement in the early stages of a session to increasingly honest, specific, and vulnerable expression as trust develops. Groups do not typically begin their card sort by naming the most uncomfortable cultural patterns. They begin by placing the aspirational cards — collaboration, empathy, empowerment, creativity — in the relatively easy above-the-line positions. As the session develops, and as the structural features of the methodology accumulate their psychological safety effects, groups become braver. The cards that were initially left in the middle pile begin to be placed. The comments become more specific: not 'we could do better at communication' but 'this is why people don't speak up in Tom's meetings.'

This progression mirrors the trust-building arc described in group dynamics research (Tuckman, 1965; Wheelan, 2005) but occurs with notable speed — often within a single ninety-minute session. The structural features of the methodology appear to accelerate the normal trust-building process by removing the interpersonal risk that normally slows it. Because honest expression is attached to a card rather than to a person, because there is no wrong answer, because the dealing mechanism has already demonstrated that everyone's voice is structurally equal, participants reach the point of authentic expression earlier than the normal group development arc would predict.

The role of humour in this progression deserves specific attention. It is a consistent observation that groups laugh more than expected — particularly when a card captures a cultural pattern with uncomfortable precision. Cards such as 'never be wrong,' 'errors are unacceptable,' 'be everyone's

friend,' or 'keep those in positions of authority happy' frequently trigger laughter precisely because they name something that everyone recognises and no one has previously said out loud. This laughter is not relief laughter. It is recognition laughter — the response to having something previously unspeakable given a name. And it consistently opens the door to deeper reflection: the laughter is often followed, after a brief pause, by a story.

5.4 The Aspiration Gap

The aspiration gap — the distance between stated organisational values and rewarded behaviours — emerged as a near-universal finding across sessions. Organisations consistently identified, through the card sort process, a significant divergence between the culture they said they valued and the culture they actually practiced. Groups that espoused values of creativity, empowerment, and collaboration frequently identified, in their culture maps, patterns of fear, approval-seeking, and control as the actually rewarded behaviours.

What distinguishes the card sort's surfacing of the aspiration gap from the aspiration gap as identified by conventional culture diagnostics is the quality of the group's relationship to the finding. A survey report that identifies a gap between espoused and enacted values is a diagnostic delivered to the group. The aspiration gap that a group discovers through the card sort is something the group has found for themselves — through their own honest expression, in their own words, through a process that every participant has contributed to. The relationship to the finding is therefore one of ownership rather than reception.

The most productive expression of the aspiration gap in sessions occurs around what the methodology terms aspiration gap cards — cards that receive unanimous above-the-line placement but that the group immediately recognises as behaviours they do not actually practice. These moments — unanimous agreement followed by recognition-silence — are among the most significant in any session. The facilitator's discipline in holding the pause after such a placement, and the question that follows ('unanimous above the line — so when did you last see this rewarded here?'), consistently opens conversations of a depth and honesty that the preceding warm-up cards have made possible but not yet produced.

5.5 Systemic Attribution

A fourth consistent observation is the shift from individual to systemic attribution of cultural dysfunction that the card sort produces. Groups that begin sessions with an implicit or explicit framing of cultural problems as individual failures — particular leaders, particular teams, particular behaviours of specific people — consistently move toward systemic framing as the session develops. The question shifts from 'who is the problem?' to 'what in our environment is producing this pattern?'

This shift is theoretically significant. Systemic attribution is a prerequisite for the design phase of the Envision-Diagnose-Design sequence. If cultural dysfunction is attributed to individuals, the implied solution is individual change — through training, feedback, or replacement. If it is attributed to systems and environments, the implied solution is systemic redesign — changes to structures, incentives, habits, and conversations that make the desired behaviours more likely to occur naturally. The card sort consistently produces the latter framing, in part because the cards themselves describe patterns rather than people, and in part because the dealing mechanism has

distributed the conversation across the full group rather than concentrating it on particular individuals.

The diagnostic question that the methodology poses — 'if we were deliberately trying to design an environment that would produce the below-the-line behaviours we have identified, what would we keep exactly as it is right now?' — is among the most productive questions in the practitioner's repertoire. It operationalises the systemic attribution by asking groups to identify the environmental mechanisms that are currently producing the patterns they want to change. The answers to this question consistently point toward specific, actionable design interventions rather than the vague motivational aspirations that individual-attribution framing tends to produce.

5.6 The Emergent Sequence

The most significant finding from five years of practitioner inquiry is the consistent emergence of the Envision-Diagnose-Design sequence across independent groups in diverse contexts. Every session opens with the same question: 'What behaviours are required in this team for you and your teammates to perform at their best?' This question was chosen deliberately. It is a near transfer prompt — personal, immediate, and team-level rather than abstract and organisational — that invites participants to answer from their own lived experience of what their team needs rather than to construct a hypothetical ideal. Groups were not invited to imagine what a perfect organisation might look like. They were invited to name what they and their colleagues actually need in order to do their best work together. What happened in practice was consistently more than envisioning: groups did not stop at naming what their team needed. They moved, spontaneously and without facilitation prompting, into diagnosis and then into design.

The mechanism through which this emergence occurs is now well-understood. The envisioning phase produces shared aspiration and a specific behavioural vocabulary for it. That vocabulary immediately activates its own contrast — participants begin noticing where the aspired-to behaviours are absent, and saying so. Comments such as 'yeah but we don't do that here' or 'we do too much of this' arise not as complaints but as observations, anchored to specific cards and therefore discussable without personal accusation. The facilitator listening at the meta level notes these comments and, at the appropriate moment, returns to them: 'several people have mentioned that this card describes what we aspire to but not what we practice — can we explore that?'

The design phase follows naturally from this diagnosis. Having named the gap between aspiration and current reality in specific behavioural terms, groups consistently want to do something about it. The question 'what would need to change in our environment for these behaviours to become our norm?' is not difficult to ask at this stage. The group has done the work of envisioning the ideal and diagnosing the gap. The design question gives them a way to move from understanding to action. And the answer, produced collectively through the same dialogic process, carries the same psychological ownership as the map itself — producing commitment to specific change actions that consultants' recommendations and managers' directives consistently fail to generate.

5.7 The Hierarchical Perception Gap

A fifth consistent observation — one with significant implications for how culture diagnostics are designed and interpreted — is the hierarchical perception gap: the systematic divergence between senior and frontline assessments of the same organisational culture. This pattern was observed

repeatedly across organisations of different types and sizes. Senior groups consistently underestimated the presence of fear, approval-seeking, and dependency-related behaviours in their culture. Frontline groups identified these patterns immediately and placed them with minimal hesitation in the below-the-line category.

The divergence is not primarily a matter of dishonesty or defensiveness on the part of senior groups. It reflects a genuine perceptual difference that arises from structural position. Senior people experience the organisation from a position of relative power and visibility — a position from which the behavioural patterns that constrain those with less power are simply less visible. The micromanager does not experience being micromanaged. The person who sets the culture of approval-seeking does not typically experience the anxiety of seeking approval. The pattern is real at the level of those who experience it and genuinely invisible at the level of those who produce it.

The practical implication of this observation is significant. When culture assessments aggregate responses across hierarchical levels — as most survey instruments do — the hierarchical divergence is averaged away. The resulting culture profile describes neither the senior experience nor the frontline experience but a statistical abstraction that corresponds to the actual experience of no one. This aggregation artefact may be among the most significant sources of the widely documented failure of culture change initiatives to produce sustained change: the diagnostic that guides the intervention is systematically inaccurate for the groups most in need of change.

6. The Hierarchical Perception Gap and the Culture Perception Gap Index

6.1 Theoretical Basis

The hierarchical perception gap described in Section 5.7 is not a new observation in the organisational literature. Research on leader-member exchange theory (Dansereau, Graen and Haga, 1975), upward communication distortion (Athanassiades, 1973), and the fundamental attribution error (Ross, 1977) all point toward systematic perceptual differences between organisational levels. What is less developed in the literature is a systematic methodology for measuring these differences and using them as a diagnostic instrument in their own right — not as noise to be averaged away but as signal to be amplified and examined.

This section proposes such a methodology: the Culture Perception Gap Index (CPGI), a quantitative instrument derived from the card sort methodology that produces a systematic measure of the divergence between hierarchical levels' assessments of organisational culture. The CPGI does not require a psychometric survey. It generates quantitative data from the qualitative card sort process through a simple comparative methodology. This section describes the proposed methodology and its theoretical basis, and identifies it as a priority for future empirical research.

6.2 The Proposed Methodology

The Culture Perception Gap Index is generated through the following procedure. Groups at two or more hierarchical levels conduct independent card sorts using the same deck and the same opening question, without knowledge of each other's placements. Results are recorded by card number — above or below the line — for each group. A divergence score is calculated for each card: the

percentage of senior participants placing the card above the line minus the percentage of frontline participants placing the card above the line.

Cards with high positive divergence scores — senior above, frontline below — identify areas where leadership believes the culture is healthier than frontline experience suggests. These are the cards most likely to reveal the hierarchical blind spots described in Section 5.7. Cards with high negative divergence scores — frontline above, senior below — are less common but equally significant: they identify areas where frontline practice is more constructive than senior perception credits. The aggregate of divergence scores across all eighty cards produces the Culture Perception Gap Index for the organisation — a single number representing the overall magnitude of the hierarchical perception gap.

The CPGI has several properties that make it a potentially valuable diagnostic instrument. It is derived from the same card sort process that produces the culture map, requiring no additional instrumentation. It is specific at the card level — allowing the organisation to identify which particular behaviours and themes are most divergently perceived across levels — rather than producing only an aggregate measure. It is actionable: the cards with the highest divergence scores are not abstract findings but specific behavioural conversations waiting to be had between levels. And it avoids the aggregation artefact that distorts conventional multi-level culture surveys by treating the hierarchical divergence as the primary datum rather than averaging it away.

6.3 Propositions for Future Research

The CPGI methodology is proposed here as a research instrument requiring formal empirical investigation. The observational evidence presented in Section 5.7 is sufficient to motivate the proposal but not to validate it. The following research propositions are offered as a framework for that investigation.

First, it is proposed that the CPGI will demonstrate test-retest reliability — that organisations' hierarchical perception gaps will be consistent across independent measurements taken at different times, absent significant intervening events or interventions. This reliability is a prerequisite for the CPGI's use as a diagnostic instrument and its validity as a construct.

Second, it is proposed that higher CPGI scores will correlate with lower employee engagement, higher turnover intention, and poorer organisational performance outcomes. If the hierarchical perception gap is a genuine cultural pathology — rather than a normal feature of organisational life — it should predict outcomes in ways that validate its diagnostic significance.

Third, it is proposed that the Envision-Diagnose-Design intervention, applied across hierarchical levels with deliberate attention to the CPGI findings, will produce measurable reductions in the index over time. This proposition, if supported, would provide empirical evidence for the methodology's effectiveness in addressing one of the most significant and least addressed sources of culture change failure.

Fourth, it is proposed that the CPGI will show systematic patterns across organisational types — that particular sectors, sizes, or structural configurations will be associated with characteristic hierarchical perception gap profiles. Such patterns, if identified, would have significant implications for how culture change interventions are designed for different organisational contexts.

7. Implications for Research and Practice

7.1 Implications for Research

The theoretical framework and empirical observations presented in this paper open several research directions. The most immediately pressing is the empirical validation of the five original contributions advanced: the behaviour-first inversion, the card as epistemic tool, the gamified structure as psychological safety infrastructure, the collective Ikea Effect, and the Culture Perception Gap Index. Each of these contributions is grounded in converging theoretical traditions and supported by consistent practitioner observation. None has been subjected to the controlled empirical investigation that would establish it on firmer scientific ground.

The collective Ikea Effect in particular represents a significant gap in the existing literature. Norton, Mochon and Ariely's (2012) original research established the phenomenon at the individual level. Its extension to the group level — and specifically to the domain of collectively constructed culture artefacts — is a theoretically plausible and practically significant proposition that deserves empirical attention. A randomised controlled comparison of culture map commitment levels between groups that constructed their own map through the card sort and groups that received an equivalent map through external diagnostic processes would provide a direct test of the proposition.

The hierarchical perception gap and the Culture Perception Gap Index represent a second significant research direction. The methodology proposed in Section 6 is formally articulated and ready for empirical investigation. The research propositions offered provide a framework for that investigation, and the observational evidence from five years of practitioner inquiry provides sufficient grounding to justify the investment.

A third research direction concerns the replication and extension of the qualitative findings. The consistent phenomenological patterns described in Section 5 — the collapse of pluralistic ignorance, progressive disclosure, the aspiration gap, systemic attribution, and the emergent Envision-Diagnose-Design sequence — were observed through practitioner inquiry rather than formal research methodology. Their replication by independent researchers using formal qualitative methods — grounded theory, phenomenological analysis, or ethnographic observation — would substantially strengthen the empirical basis of the paper's claims.

7.2 Implications for Practice

The implications of this paper for practitioners of organisational culture change are significant and, in some respects, challenging. The central practical implication — that culture change requires behaviour-focused dialogue rather than attitude-focused measurement — demands a re-orientation of practice that goes beyond technique. It requires a different theory of change: one that starts with behaviour, works through collective dialogue, and produces environmental redesign rather than attitudinal prescription.

The most immediately actionable implication concerns the sequencing of culture work. The Envision-Diagnose-Design sequence suggests that culture change conversations should begin with the ideal rather than the dysfunctional — with shared aspiration before honest diagnosis. Practitioners who begin culture work by administering diagnostics and presenting gap reports may be activating defensive routines at precisely the moment when openness is most needed. Beginning with a struc-

tured envisioning exercise — even a relatively simple one — before moving to diagnosis may produce qualitatively different conditions for the diagnostic conversation that follows.

The architectural approach to psychological safety has implications for facilitation training and certification. If psychological safety can be built into intervention structures rather than depending entirely on relational skill, then facilitation training should devote at least as much attention to intervention design as to interpersonal technique. The skilled facilitator is one who understands the structural conditions that produce the effects they seek and can design those conditions deliberately — not merely one who can manage group dynamics through personal warmth and presence.

The CPGI findings have implications for how culture diagnostics are commissioned and interpreted. Organisations that commission culture surveys and receive aggregate findings averaged across hierarchical levels are receiving systematically distorted information. Practitioners who can offer a methodology that preserves and highlights hierarchical divergence rather than averaging it away — and who can facilitate the cross-level conversations that the divergence maps call for — offer a qualitatively different service from the standard diagnostic approach.

Finally, the multi-session longitudinal design of the methodology has implications for how culture change engagements are structured commercially. Single-session culture workshops — however well-facilitated — are unlikely to produce sustained behaviour change, for the theoretical reasons developed in Section 3. Culture change work that is sold and delivered as a series of recurring sessions, with the card sort providing the repeating structure for collective attention to behaviour over time, is more likely to produce the kind of sustained environmental redesign that behaviour change requires.

8. Conclusion

This paper began with a provocation: that organisations do not have culture problems, but behaviour problems that culture language has made harder to solve. It ends with a proposition: that the solution is not better measurement but better conversation — and that better conversation can be deliberately designed.

The Culture Science Cards methodology represents one such design. Drawing on constructivism, behavioural economics, semiotics, and gamified dialogue theory, it instantiates six structural elements — the Structured Epistemic Equality Framework — that together produce the psychological conditions for the kind of honest cultural self-assessment that culture change requires. The envisioning-first Envision-Diagnose-Design sequence that emerged from five years of practitioner inquiry is not a facilitation technique. It is a behaviour change architecture: a deliberately designed progression from shared aspiration through honest diagnosis to specific environmental redesign, conducted in a structure that produces the collective ownership — the group-level Ikea Effect — that transforms conversation into commitment.

The five original contributions advanced in this paper — the behaviour-first inversion, the card as epistemic tool, the gamified structure as psychological safety infrastructure, the collective Ikea Effect, and the Culture Perception Gap Index — are each grounded in converging theoretical traditions and supported by consistent practitioner observation. They require, and invite, the formal

empirical investigation that will establish them on firmer scientific ground. The research agenda proposed in Section 6 provides a framework for that investigation.

The deeper argument of the paper is not about cards. It is about the conditions under which groups tell themselves the truth about their culture. Those conditions — psychological safety, epistemic equality, shared ownership of the inquiry process, and sufficient structure to make honesty safe — can be designed. When they are, groups do not need to be told what their culture is, or what it should be, or how to change it. They discover it themselves. They name it in their own words. They build the map of their ideal culture with their own hands. And they carry the commitment that self-creation always produces: the disproportionate valuation of what we have made, the determination to close the gap between what we have built in a conversation and what we inhabit every day.

That is not a culture conversation. That is the beginning of culture change.

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