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Vidar Top, Carl Åberg, Ole Boe

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Revisiting Walter Bradford Cannon's 100-year-old fight-or-flight concept

Vidar Top*, Carl Åberg and Ole Boe

Department of Business, Strategy and Political Sciences,
University of South-Eastern, Norway
Email: vidar.top@usn.no
Email: carl.aberg@usn.no
Email: ole.boe@usn.no
*Corresponding author

Abstract: This study aims to analyse and combine the entire 100-year-long development of fight-or-flight-based research on emotional excitement and behaviour. It presents a comparative concept analysis of all the relevant word pairs that have emerged. A scoping and a targeted literature review were conducted to map word pairs across all related research streams. These reviews facilitated a comparative conceptual analysis. The results were combined to reflect the status quo of fight-or-flight concepts and how well word pairs explain emotions and behaviour relative to communication in conflict. The analysis surfaces violence and silence as an umbrella term. Comparing and contrasting all word pairs helps reduce barriers to cross-disciplinary research on emotional excitement and behaviour. By providing insights into how different concepts are overlapping but not the same, researchers from different paradigms can more easily draw on a full spectrum of findings when moving forward.

Keywords: behaviour; communication; concept analysis; conflict; emotions; fight-or-flight.

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Biographical notes Vidar Top is a PhD Research Fellow at the Department of Business, Strategy, and Political Sciences at the University of South-Eastern Norway. He has trained 30,000+ people in 27 countries on behaviour change to improve results. His research focus for the past 20 years has been on execution throughout teams and organisations, beginning in the boardroom and with top executives. He has published books and articles on topics related to corporate governance and leadership, such as influence, questioning skills, rhetoric, change management, crucial conversations, and accountability.

Carl Åberg is an Associate Professor at the Department of Business, Strategy and Political Sciences at the University of South-Eastern Norway. He completed his PhD at the Chair of Management and Corporate Governance at the Witten/Herdecke University. His research interests are in the areas of corporate governance, boards of directors, family firms, ventures, and dynamic capabilities. His papers have been published in journals such as *British Journal of Management, European Management Journal and Journal of Management*

and Governance, while also contributing with texts in Oxford University Press and Edward Elgar Publishing. He frequently reviews in journals such as *Journal of Business Research, Small Business Economics and Journal of Management and Governance.*

Ole Boe is a full Professor of Organisation and Leadership at the Norwegian Police University College and the University of South-Eastern Norway and a Professor II of Crisis Management and Preparedness at the Inland Norway University of Applied Sciences (INN University). He holds a PhD in Cognitive Psychology and previously served as an Associate Professor at the Norwegian Military Academy and the Norwegian Defence University College, where he taught military leadership and conducted leadership development for officers. He has published over 370 scientific works on stress management, character strengths, decision-making, military leadership, and leadership development. He is an editor and author/coauthor of eight books. He is a graduate of the Norwegian Defence Command and Staff College and served almost 20 years in the military, including several years as an operations officer (Captain, Retd.) in a Norwegian military special unit.

1 Introduction

How we communicate in conflicts matters (Caputo et al., 2019). Understanding and effectively managing conflict is a pivotal aspect of human interaction that affects various facets of our personal and professional lives (Nathan and Devonshire, 2023). Conflict, while often perceived unfavourably, holds the potential for growth, innovation, and strengthened relationships when approached constructively (Mu et al., 2021). In organisational contexts, effectively navigating conflict is crucial for decision-making, fostering a culture of open communication, and ensuring the institution's long-term sustainability (Stapinski et al., 2023). Similarly, adept conflict management in personal relationships can lead to a deeper understanding and respect for diversity and harmony (Kidder et al., 2004). By examining how we engage in conflict, specifically regarding emotions and behaviours, and the physiological underpinnings of our responses, we can better understand and optimise how we approach them, ensuring more constructive outcomes in both professional and personal spheres (Nathan and Devonshire, 2023).

To the degree that such a phenomenon exists, productive conflict requires reading others' emotions and responding appropriately (Bodtker and Katz Jameson, 2001). However, emotions are, of course, not easily read but instead 'interpreted with a human flair for feelings through how we perceive other people's behaviour' (Goleman, 2001, p.16; Israelsson et al., 2023). Thus, combining *emotions* and *behaviour* is central to communication during conflicts (Nair, 2008). Walter Bradford Cannon's fight-or-flight (1915) suggests that when we encounter a conflict, our bodies undergo a physiological reaction that prepares us to confront or escape the threat. Whether conscious or merely reactive, the selected response depends on numerous variables and can significantly impact the ability to communicate effectively in conflict (Ayub et al., 2017; Barbuto et al., 2010; Fitzpatrick, 2007). However, fight-or-flight has branched into various dimensions and research traditions (McEwen and Akil, 2020). This diversification has led to a broader understanding of the multifaceted nature of the fight-or-flight response and its complex interplay with various physiological factors (Bracha, 2004; Gross, 1998;

LeDoux, 2000; McEwen and Wingfield, 2003). Nevertheless, fight-or-flight has been extended to many *concepts* that do not easily relate to each other. Therefore, updating the fight-or-flight responses concerning communication in conflict will help combine existing and future research (Bracha et al., 2004). This development is noteworthy in many fields of research. For example, there have been competing arguments and inconsistent empirical results regarding the influence of negative affective experiences on proactive behaviour. This inconsistency suggests a lack of systematic understanding of how and when emotions, such as anger and fear, influence behaviour in conflict, challenging the concept of fight-or-flight (Lebel, 2016).

1.1 Aim of study, research question, and structure of article

The aim of this study was to resolve such inconsistencies by drawing on research findings across *different* traditions. However, conflict research lacks interdisciplinary dialog (Deutsch et al., 2011; Furlong, 2020). Research often uses specialised terminology that is not easily understood outside the field (Klein, 1990). This tendency can make interdisciplinary exchanges challenging (Fischhoff, 2013). Additionally, paradigms often employ different methodologies that can deepen the divide (Creswell and Creswell, 2017). A researcher using qualitative methods to study interpersonal conflict may find it challenging to engage with a researcher using quantitative methods to study organisational conflict (Creswell and Creswell, 2017). Finally, researchers often publish papers in journals specific to their sub-disciplines. This narrowness of scope limits the exposure of their work to scholars in other areas of research which might be similar (Garfield, 2006). Based on Lebel's (2016) argument we suggest there is a need to gather a comprehensive overview of emotions and behaviour when communicating in conflict. Therefore, our starting point for this study was Cannon's (1915) fight-or-flight concept, including Cannon's (1932) seminal work on homeostasis as the balancing concept. Hence, our research question became how fight-or-flight has developed into different word pairs across research streams. We decided to do this by conducting a comparative concept analysis of word pairs spanning the entire 100-year-development.

Our comparative concept analysis reveals that emotions and behaviour in conflict, grounded in Cannon's fight-or-flight theory (1915), function predominantly in isolation with many divergent or overlapping concepts. The body of knowledge would benefit from greater clarity about concept resemblance, making cross-disciplinary research easier by understanding how they are 'concept siblings' in an extended family, of which Cannon's fight-or-flight is the 'mother concept.' Today, such a complete analysis of how we communicate in conflict is missing, and without it, a multidisciplinary perspective has untapped potential. If researchers could more easily draw parallels from findings in one area of expertise to those of another, seemingly discordant results could provide more significant insights.

This article is presented in eight sections:

1 We propose that a complete historical review of the fight-or-flight response is needed because it has given birth to many different research streams.

2 We argue in favour of Rodgers and Knafl's (1993) relativistic approach, as it considers how concepts may develop over time. We adapted their method to conduct a comparative concept analysis.

3 Next, we present a two-step literature review method for selecting relevant concepts for comparison. First, we conducted a scoping review and mapped 52 word pairs similar to fight-or-flight (Arksey and O'Malley, 2005). After filtering relevant word pairs, we conducted a targeted literature review (Snyder, 2019). We adhered to the 'preferred reporting items for systematic reviews and meta-analyses' (PRISMA) for both studies (Page et al., 2021).

4 Finally, we carried out the intended comparative concept analysis, contrasting word pairs as the basis for our

5 Discussion.

6 Conclusions (Cronin et al., 2010).

7 Contribution.

8 Limitations and future research.

2 Historical background

Virtually every conflict theory today involving emotions and behaviour can be traced back to Cannon's original fight-or-flight (Buss, 2019; Collins, 2004; Lazarus and Folkman, 1984). Fight-or-flight has branched out, resulting in a 100-year-long journey with untold ties to various concepts (LeDoux, 2003; Porges and Furman, 2011; Sapolsky, 2004). This trend may drive conflicting lines of research (Barrett et al., 2016; Keltner et al., 1993). Fight-or-flight responses engender considerable debate in conflict-related research. However, incongruent concepts can stifle cross-disciplinary research as they lack a broad perspective. This comparative concept analysis will provide such scope.

Profound differences exist in how fight-or-flight responses are applied. Within gender studies, a discussion about the premise of the phenomenon has emerged. The discovery of the response was based on studies of male animals. Thus, some researchers argue that it does not translate well to females, who may have evolved different stress responses due to other social and biological roles. Hence, some say that the fight-or-flight response is too male-centric. It is inadequate to describe the female stress response. 'Tend and befriend' surfaced as an alternative (Taylor et al., 2000).

Opposing claims have been made regarding neurochemical responses; understanding the full range of neurochemical reactions can lead to more effective stress management and conflict resolution strategies. While adrenaline is often cited as the primary hormone involved in fight-or-flight, some researchers argue that other neurochemicals like cortisol and oxytocin play equally essential roles (Joëls et al., 2008).

The influence of cultural variability has also been disputed. Some researchers argue that fight-or-flight is not universal but varies depending on social and environmental factors. This argument challenges the idea that fight-or-flight is a hardwired evolutionary response. Instead, it suggests that the response may be malleable (Henrich et al., 2010). Finally, arguments diverge considerably when applying fight-or-flight to social and organisational conflicts. While fight-or-flight has been used to explain behaviour in social and corporate disputes, some researchers have questioned its applicability in complex settings. They argue that social and organisational conflicts often involve long-term relationships and complex power dynamics that may not be adequately explained by an

immediate fight-or-flight response (Jehn and Bendersky, 2003). Overall, the question is whether fight-or-flight is an incomplete explanation of reality. Some researchers propose that humans also have a 'freeze' or 'fawn' response to stress and conflict. If so, this expands the model to better account for human behaviours observed in stressful situations, including paralysis and appeasement (Bracha, 2004). These disagreements highlight the complexity of human behaviour and the challenges of applying biological models to social and psychological phenomena. Without a holistic, higher-order perspective, the bigger picture may be lost. Thus, we have arrived at an appropriate time to provide a holistic, higher-order view of the fight-or-flight response.

2.1 Fight-or-flight as a cross-disciplinary concept

Cannon coined the phrase *fight-or-flig*ht, also referred to as a hyperarousal or acute stress response (Southwick et al., 1994). Strictly speaking, we do not know whether the word pair can be attributed to him. However, he popularised it in his research on emotional excitement and behaviour, bridging the gap between the biological and psychological sciences (Cannon, 1915; Cannon, 1929). Although Cannon did refer to fight-or-flight earlier than 1915 (Cannon, 1914), on the hundredth anniversary of his seminal work surrounding traumatic shock, where the foundation for fight-or-flight emerged (Cannon and Cattell, 1922), we see an ever-increasing number of varying word pairs stemming from fight-or-flight. These pairs may not necessarily carry the same meaning but instead build on the original idea. Each opposing word pair (juxtaposed concepts) fills a gap once identified by Cannon (1915) and carries significant research traditions that have been applied to clarify *emotions* and *behaviour*. Hence, today, many word pairs exist.

Fight-or-flight responses have far-reaching implications. They constitute the cornerstone of various research streams and academic disciplines. Particularly, they are foundational in studying stress, anxiety, and fear responses (Bracha, 2004; Cannon, 1915; Funkenstein, 1958; Steimer, 2022; Öhman, 2008). Different fields *within* psychology apply fight-or-flight responses in various ways. For example, aviation psychology utilises fight-or-flight responses to better understand how pilots respond to high-stress situations (O'Hare, 1992, 1997; Stokes and Kite, 2017). Educational psychology has explored how fight-or-flight responses affect learning and performance in academic settings (Zeidner, 1998). Environmental psychology studies how different environments (e.g., urban vs. rural) trigger or modulate fight-or-flight responses (Ulrich, 1984). Clinical psychology and psychiatry study how maladaptive fight-or-flight responses contribute to mental health disorders such as anxiety and post-traumatic stress disorder (PTSD) (Barlow, 2004). Health psychology investigates how stress responses, including fight-or-flight, affect overall health and well-being (Cohen and Herbert, 1996). Medical research seeks to clarify how chronic fight-or-flight response activation affects long-term health (McEwen, 1998). Neuroscience has applied the fight-or-flight response to investigate neural pathways and activity in distinct brain regions (Kuwaki, 2021, LeDoux, 2003 Scheepers and Swart, 2020). Endocrinology examines hormonal changes, particularly the roles of adrenaline and cortisol, while triggering these responses (Sapolsky, 2004, Sheng et al., 2021). Pharmacologists investigate drugs that can modulate them, such as beta-blockers (Rang et al., 2011).

Social aspects evolved in this respect. Fight-or-flight responses have been studied in the context of organisational behaviour, particularly in high-stress situations such as corporate crises (Staw et al., 1981). Furthermore, emergency management and disaster

response fight-or-flight patterns are useful when seeking to understand human behaviour during mass casualty events (Drury et al., 2009). Communication studies have tied analogous connections to how fight-or-flight responses affect interpersonal communication, particularly in conflict (Afifi and Afifi, 2009). Similarly, sociology has examined how fight-or-flight responses manifest in social settings, such as crowd behaviour during emergencies, although this has not been a primary focus (Quarantelli, 2001). Furthermore, military science has researched how soldiers react under combat stress and how to train for optimal responses (Boe and Hagen, 2015; Grossman and Siddle, 2000). Political science considers how fight-or-flight responses may influence decision-making, especially during crises (McDermott, 2004). Sports science has explored how fight-or-flight responses affect athletic performance (Hardy, 1999). Anthropology has sought greater awareness of how cultural factors may influence fight-or-flight responses (Geertz, 1973) and how context can shape genetic predispositions toward stress responses, influencing individual and collective behaviours in the face of stressors (Chiao and Blizinsky, 2010).

These research streams offer diverse perspectives on fight-or-flight phenomena, each contributing unique insights into its mechanisms, implications, and applications. As this analysis will reveal, they demonstrate widespread interest in the fight-or-flight phenomena across various disciplines.

3 Comparative concept analysis

In the scholarly landscape of concept analysis, two methodologies have gained prominence for their distinct approaches to clarifying the meanings of terms, especially within healthcare disciplines such as nursing: the realist-based methodology, first published in 1983 and developed by Walker and Avant (2005), and the relativistic approach proposed by Rodgers and Knafl (1993). Although both methods aim to provide clarity and depth in understanding concepts, they diverge significantly in their philosophical foundations, procedural methods, and practical applications.

Walker and Avant's (2005) concept analysis is anchored in *realist* epistemology, which assumes that the meaning of a concept is fixed and can be understood universally. This perspective lends itself to systematic and linear methodology. This approach involves a series of well-defined steps starting with the selection of a concept, moving through the identification of its uses, defining its attributes, and culminating in the identification of empirical referents. The goal is to arrive at a standardised, universally accepted definition that can be operationalised for empirical research. This method is particularly beneficial when a concept is relatively new, lacks foundational understanding, or requires a clear operational definition for empirical studies.

In contrast, Rodgers and Knafl's (1993) concept analysis is grounded in relativistic epistemology, which posits that the meaning of a concept is fluid and can evolve and be influenced by social, temporal, and contextual factors. The methodology of Rodgers and Knafl is less prescriptive and aims to highlight how concepts develop over time. It involves a comprehensive review of the existing literature to understand the various contexts in which a concept has been used and the factors that influence its meaning. This approach is valuable for theoretical research and analysing concepts that are complex, ambiguous, or influenced by cultural or social factors. The choice between these two

methodologies is contingent on the nature of the concept under investigation and the research objectives.

The relativistic approach of Rodgers and Knafl (1993) benefits our analysis by accounting for how fight-or-flight is understood *over time*. Unlike the realist approach, which seeks to fix the meaning of fight-or-flight in a static form, the relativistic approach acknowledges that fight-or-flight has evolved. Our analysis confirms that several disciplines have altered the meaning and application of the paired concepts of fight-or-flight. Rodgers and Knafl's (1993) approach allows for a more nuanced understanding that considers these shifts, thereby providing a richer and more contextualised understanding (Risjord, 2009). Furthermore, the relativistic approach is more adaptive to the complexities of real-world applications. In an ever-changing societal landscape, the meanings of concepts can shift owing to technological advancements, cultural changes, or new scientific discoveries. Rodgers and Knafl's approach is better equipped to capture these dynamic changes, making it relevant and applicable to the context of our analysis (Risjord, 2009).

However, finding out how fight-or-flight has developed into different word pairs across research streams does not merely require a concept analysis. Instead, a *comparative* concept analysis is needed. A comparative concept analysis can be […] defined as an activity in which concepts, their characteristics, and *relations to other concepts* are clarified [Nuopponen, (2010), p.4]. Following the overall guidelines of Rodgers and Knafl's (1993) seminal work, an adapted five-step process was applied. These steps include identifying all potential concepts for comparison, filtering relevant concepts, identifying the principles underlying each idea and how they have changed over time, comparing the concepts' essential attributes and where they currently stand, and summarising the implications for future research.

4 Method

This comparative concept analysis aimed to provide a comprehensive overview of how fight-or-flight branched out during the hundred years following Cannon's (1915) original work. As we have already seen, many diverse research streams have brought fight-or-flight into play in one way or another. Therefore, our comparative concept analysis had to

a *map out* the entire body of knowledge of what has been documented (i.e., a scoping review), followed by

b a thorough investigation to *interpret* the overall picture that emerged (i.e., a targeted literature review).

'Scoping studies […] aim to map […] key concepts underpinning a research area and the primary sources and types of evidence available, […], especially where an area is complex or has not been comprehensively reviewed before' [Arksey and O'Malley, (2005), p.21]. This review type helps to identify literature gaps, clarify key concepts, and inform future research (Pham et al., 2014). We then conducted a targeted literature review (Cooper, 1988). Recent examples of two-step structured reviews have proven helpful in studies that require a similar design (Aguey-Zinsou et al., 2023; Fiaz and Qureshi, 2021). As a practical approach, we aimed to find word pairs akin to the original

fight-or-flight as a starting point for how research traditions have extended the theory of similar opposites within their respective fields. It was a charted course for gathering data on how identical word pairs within separate research streams had developed.

4.1 Scoping review

To study and understand the full extent of topics related to communication and conflict, specifically emotional excitement and behaviour, we first asked which dominant word pairs emerged from Cannon's original fight-or-flight (1915). The operationalisation of this central question led us to ask more specific research questions. First, do research traditions and paradigms produce closely related terms and keywords? Second, what key concepts and definitions emerge, and what critical characteristics or related factors can provide a structured overview? Third, what are the similarities and differences between each word pair and fight-or-flight?

Figure 1 PRISMA flow diagram for the scoping review (see online version for colours)

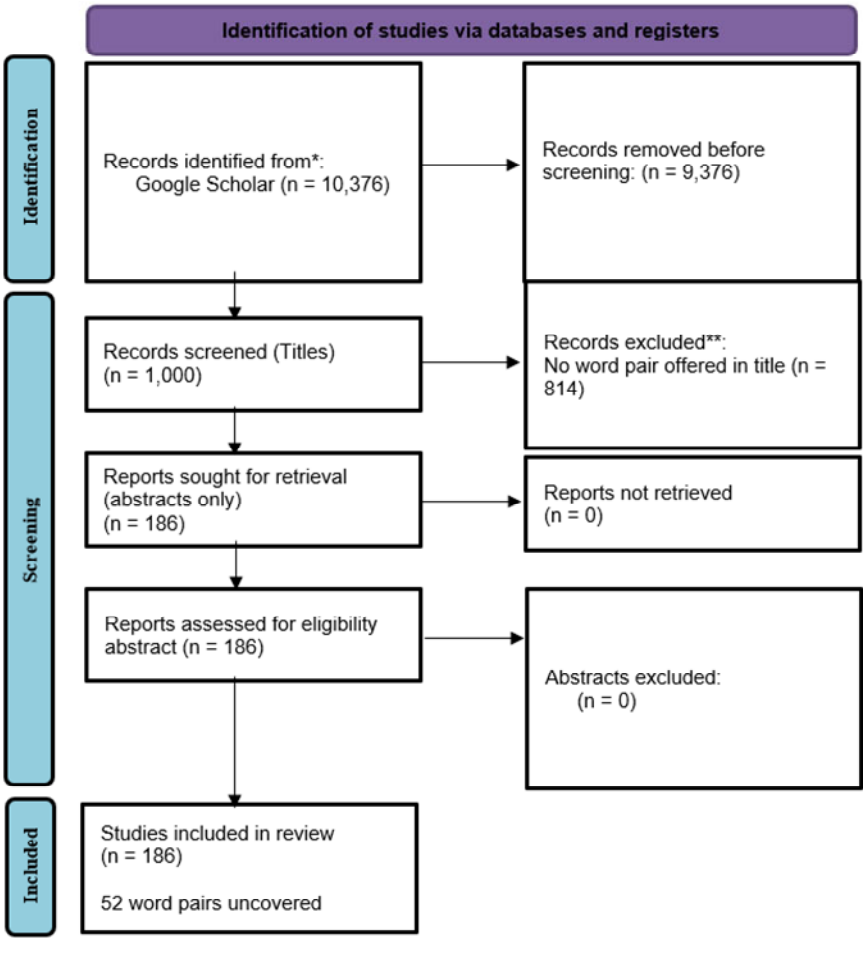


Table 1 Analysis of 52 word pairs potentially contrasting fight-or-flight responses

Word pairs	*Paradigm/research stream**	*Concept consistency*	*Construct resemblance*	*E&B variable dimension***
'Abusive behaviour AND supportive behaviour'	C, CPP, FT, OP, P, S, SP			
'Acquiesce OR rebel'	CS, LS, OB, P, PS, S	•	•	
'Acting out OR not'	CBT, CP, DP, EP, FAT, PA	•		
'Active VERSUS passive approaches'	C/N, IF, LE, HM, M, ML	•		
'Actor VERSUS spectator'	COM, IR, MCS, PH, PS, S, SP, TP			
'Adaptation OR persistence'	BECO, E, EB, P			
'Aggressive VERSUS submissive'	AB, C/N, FT, GS, OB, P, S, SP	•	•	•
'Agreeable VERSUS disagreeable'	HP, OB, PP	•		
'Approach avoidance'	AT, BN, C/N, HP, MT, RST, SP	•	•	•
'Attack defend patterns' (also: flee)	AB, CCS, MS, P	•	•	
'(to) blow OR not to blow the whistle'	BE, CG, LS, OB, P, PUB, S, SP	•		
'Compliance OR resistance' (also 'comply' or 'defy')	HM, M, OB, PS, SP	•	•	
'Conformity AND nonconformity'	CB, CS, M, PS, S, SP	•	•	
'Cooperation VERSUS confrontation'	BECO, C/N, E, EB, IR, ML, OB, PS, SP			
'Courage AND cowardice'	BE, MS, P, PH, S/L, SP			
'Dealing with OR reporting'	C, COM, EP, HM, HRM, LS, MCS, OB, P			

Notes: *Archeology (A), art and aesthetics (AA), animal behaviour or ethology (AB), attachment theory (AT), business ethics (BE), behavioural ecology (BECO), behavioural neuroscience (BN), business strategy and competition (BSC), criminology (C), consumer behaviour (CB), cognitive behaviour therapy (CBT), corporate governance (CG), conflict/negotiation (C/N), community and public health (CPH), clinical psychology and psychiatry (CPP), critical theory (CT), cybersecurity and computer science (CCS), communication (COM), cultural studies (CS), developmental psychology (DP), economics (E), evolutionary biology (EB), engineering and control theory (ECT), educational psychology (EP), emotion regulation (ER), feminist theory (FT), family therapy (FAT), gender studies (GS), healthcare and medicine (HM), health psychology (HP), human resource management (HRM), investment and finance (IF), international relations (IR), indigenous studies (IS), linguistics (L), learning and education (LE), legal studies (LS), marketing (M), media and communication studies (MCS), management and leadership (ML), military strategy (MS), motivation theory (MT), organisational behaviour (OB), organisational psychology (OP), psychology (P), psychoanalysis (PA), philosophy (PH), post-colonial studies (PCS), personality psychology (PP), public policy (PUB), political science (PS), reinforcement sensitivity theory (RST), social psychology (SP), sociology (S), storytelling/literature (S/L), sports Sciences (SS), systems theory (ST), theater and performance (TP), tourism (T). For simplicity, several research streams and paradigms were combined. ** Emotion and Behaviour (E&B).

Table 1 Analysis of 52 word pairs potentially contrasting fight-or-flight responses (continued)

Word pairs	*Paradigm/research stream**	*Concept consistency*	*Construct resemblance*	*E&B variable dimension***
'Defensive AND nondefensive'	COM, C/N, ML, OB, P, SS			
'Defensive VERSUS aggressive'	C, C/N, ML, MS, OB, P, PP, SS	•	•	
'Defensive VERSUS offensive'	BSC, CCS, IR, MS, PS, SS	•	•	
'Engage OR disengage'	CCS, C/N, EP, HP, OB, P	(•)	•	•
'Escape AND attention seeking behaviour'	BP, CPP, EP, SP	•		
'Evasion AND assertion'	CB, C/N, COM, EP, IR, M, LS, P			
'Exit AND voice'	CB, E, HRM, OB, PS	•	•	
'Express OR suppress'	CPP, COM, ER, OB, SP	•	•	•
'Feedback OR not to feedback'	CCS, CPP, ECT, EP, HRM, OB, SP, ST			
'Hiding VS hoarding' (also 'knowledge withholding')	A, CCS, CPP, E, P, S			
'Horizontal violence AND lateral violence'	HM, IS, OB, S, SP			
'Introvert AND extrovert'	CPP, HRM, OB, PP, SP	•		
'Involved VERSUS uninvolved'	CB, CPH, DP, EP, M, OB			
'Isolation VERSUS engulfment'	FAT, HM, P, S, SP			
'Masking behaviour AND unmasking'	COM, HP, OB, SP			
'Open VERSUS closed'	CCS, E, EP, PP, PS, ST			
'Overlapping talk AND turn-taking'	COM	•		
(to) 'participate OR not'	CPH, CS, EP, PS, SP			

Notes: *Archeology (A), art and aesthetics (AA), animal behaviour or ethology (AB), attachment theory (AT), business ethics (BE), behavioural ecology (BECO), behavioural neuroscience (BN), business strategy and competition (BSC), criminology (C), consumer behaviour (CB), cognitive behaviour therapy (CBT), corporate governance (CG), conflict/negotiation (C/N), community and public health (CPH), clinical psychology and psychiatry (CPP), critical theory (CT), cybersecurity and computer science (CCS), communication (COM), cultural studies (CS), developmental psychology (DP), economics (E), evolutionary biology (EB), engineering and control theory (ECT), educational psychology (EP), emotion regulation (ER), feminist theory (FT), family therapy (FAT), gender studies (GS), healthcare and medicine (HM), health psychology (HP), human resource management (HRM), investment and finance (IF), international relations (IR), indigenous studies (IS), linguistics (L), learning and education (LE), legal studies (LS), marketing (M), media and communication studies (MCS), management and leadership (ML), military strategy (MS), motivation theory (MT), organisational behaviour (OB), organisational psychology (OP), psychology (P), psychoanalysis (PA), philosophy (PH), post-colonial studies (PCS), personality psychology (PP), public policy (PUB), political science (PS), reinforcement sensitivity theory (RST), social psychology (SP), sociology (S), storytelling/literature (S/L), sports Sciences (SS), systems theory (ST), theater and performance (TP), tourism (T). For simplicity, several research streams and paradigms were combined. ** Emotion and Behaviour (E&B).

Table 1 Analysis of 52 word pairs potentially contrasting fight-or-flight responses (continued)

Word pairs	*Paradigm/research stream**	*Concept consistency*	*Construct resemblance*	*E&B variable dimension***
'Promotive VERSUS prohibitive voice'	OB	•		
'Prosocial AND antisocial behaviour'	C, DP, LE, SP			
'Protest OR pleasure'	AA, C, COM, ER, P, S			
'Pull VERSUS push'	CB, CCS, EP, M, T			
'Pulling away AND moving toward'	AT, COM, OB, PP	•		
'Reactive VERSUS proactive aggression'	C, C/N, DP, HP, IR, LE, SP	•		
'Right-hand column AND left-hand column'	CBT, P	•		
'Righting-reflex AND questioning'	CS, FT, LE, PCS, SP	•		
'self-restraint AND impulsive behaviour'	BN, C, CB, CPH, CPP, DP, LE, M, ML, PP, SS	•	•	
'Silence OR violence'	C/N, COM, GS, IR, ML, SP	(•)	•	•
'Social loafing AND social facilitation'	CPP, LE, OB, SP, SS	•		
'Speak up OR shut up'	COM, CS, EP, OB, PS	•		
'(to) speak OR not to speak'	COM, CS, GS, L, LE, P	•		
'Strike AND hold'	E, LS, PS, S	•		
'Surface acting AND deep acting'	CB, CBT, C/N, CPP, EP, ER, HM, M, ML, S	•	•	•
'Thinker AND interactant AND actor'	AA, CCS, COM, EP, IR, ML, P, PS, TP	•	•	
'Voice AND silence'	EP, LS, MCS, OB, SP	•	•	•
'Voice AND spiral of silence'	COM, CPH, MCS, PS	•		

Notes: *Archeology (A), art and aesthetics (AA), animal behaviour or ethology (AB), attachment theory (AT), business ethics (BE), behavioural ecology (BECO), behavioural neuroscience (BN), business strategy and competition (BSC), criminology (C), consumer behaviour (CB), cognitive behaviour therapy (CBT), corporate governance (CG), conflict/negotiation (C/N), community and public health (CPH), clinical psychology and psychiatry (CPP), critical theory (CT), cybersecurity and computer science (CCS), communication (COM), cultural studies (CS), developmental psychology (DP), economics (E), evolutionary biology (EB), engineering and control theory (ECT), educational psychology (EP), emotion regulation (ER), feminist theory (FT), family therapy (FAT), gender studies (GS), healthcare and medicine (HM), health psychology (HP), human resource management (HRM), investment and finance (IF), international relations (IR), indigenous studies (IS), linguistics (L), learning and education (LE), legal studies (LS), marketing (M), media and communication studies (MCS), management and leadership (ML), military strategy (MS), motivation theory (MT), organisational behaviour (OB), organisational psychology (OP), psychology (P), psychoanalysis (PA), philosophy (PH), post-colonial studies (PCS), personality psychology (PP), public policy (PUB), political science (PS), reinforcement sensitivity theory (RST), social psychology (SP), sociology (S), storytelling/literature (S/L), sports Sciences (SS), systems theory (ST), theater and performance (TP), tourism (T). For simplicity, several research streams and paradigms were combined. ** Emotion and Behaviour (E&B).

In close collaboration with a team of library consultants and researchers, the scoping review comprised a title search of Google Scholar from 1932 to 2022 to map the full extent of historical development. Works cited by Cannon (1932) were retrieved using Publish or Perish2 software (Harzing, 2007). This strategy allowed for a bulk download of the top 1,000 results (sorted by relevance) from Google Scholar out of 10,376 (as of mid-November 2021). This bulk download was exported to EndNote for screening purposes. Titles and abstracts indicating possible word pairs were included in 186 articles (see Figure 1).

4.2 Filtering for relevant word pairs

Revisiting our research question, we operationalised it into four inclusion and exclusion criteria. The first criterion was the most demanding undertaking in this regard. We investigated all the different research streams or paradigms where word pairs had been mentioned or applied. Table 1 displays this overview. All but two word pairs were utilised in more than one research stream. The two exceptions were 'overlapping talk versus turn-taking' and 'promotive versus prohibitive voice,' which only appeared once in communication research and organisational behaviour. According to our main research question, the analysis aimed to view these word pairs in light of how fight-or-flight has been applied to communication in conflict. Therefore, any word pair applied solely to research streams unrelated to communication was excluded regardless of how many other paradigms used it. The first criterion was as follows:

4.2.1 Is the paradigm related to dialog or communication?

Among these articles, 52 word pairs related to communication surfaced (see Table 1).

The second criterion for inclusion or exclusion was straightforward. We looked for consistency among the remaining word pairs, primarily whether they were consistently used as word pairs. We discovered that they were often not used as generalised concepts and were thus excluded. The second criterion was as follows:

4.2.2 Do opposing concepts appear consistently in research as a combined word pair?

19 word pairs were excluded for not being consistent as a concept, and 33 remained.

The third criterion prompted the most discussion: whether the word pair was similar to the original idea of fight-or-flight. Conversations ended with an emphasis on individuality, whether it was personal, and the construct was clearly defined. Therefore, the third criterion was formulated as follows:

4.2.3 Do constructs resemble the original individual fight-or-flight response?

17 word pairs were excluded for not being individual or clearly defined, and 16 remained. The fourth criterion was used to determine whether a word pair was a measurable variable. Specifically, each opposite dimension of a word pair is required to explain or reflect emotions and behaviours. Therefore, the fourth criterion was:

4.2.4 Do the variables measure a dimension of emotions and behaviour?

Another nine word pairs were excluded because they were not measurable variables for emotions and behaviours. Hence, in total, from among the 52 viable paired candidates (see Table 1), 45 word pairs were excluded. The seven word pairs that remained and surfaced as relevant were:

1 express versus suppress

2 deep acting versus surface acting

3 aggressive versus submissive

4 approach versus avoidance

5 engage versus disengage

6 voice versus silence

7 violence versus silence.

4.3 Targeted literature review

The second part of our main research question was the following: To what extent and how do concepts overlap? We operationalised this two-fold question with four questions that comprised the bulk of the literature review matrix:

1 Which methodologies were predominantly accepted?

2 Which quantitative measurement scales have been validated to document these phenomena empirically?

3 How are word pairs defined across different studies, and what other variables relating to fight-or-flight are mentioned?

4 How has the understanding of each word pair developed over time? These questions covered most of our questions in the targeted literature review, which aimed to search for peer-reviewed research articles on the seven relevant word pairs.

4.4 Databases and search terms

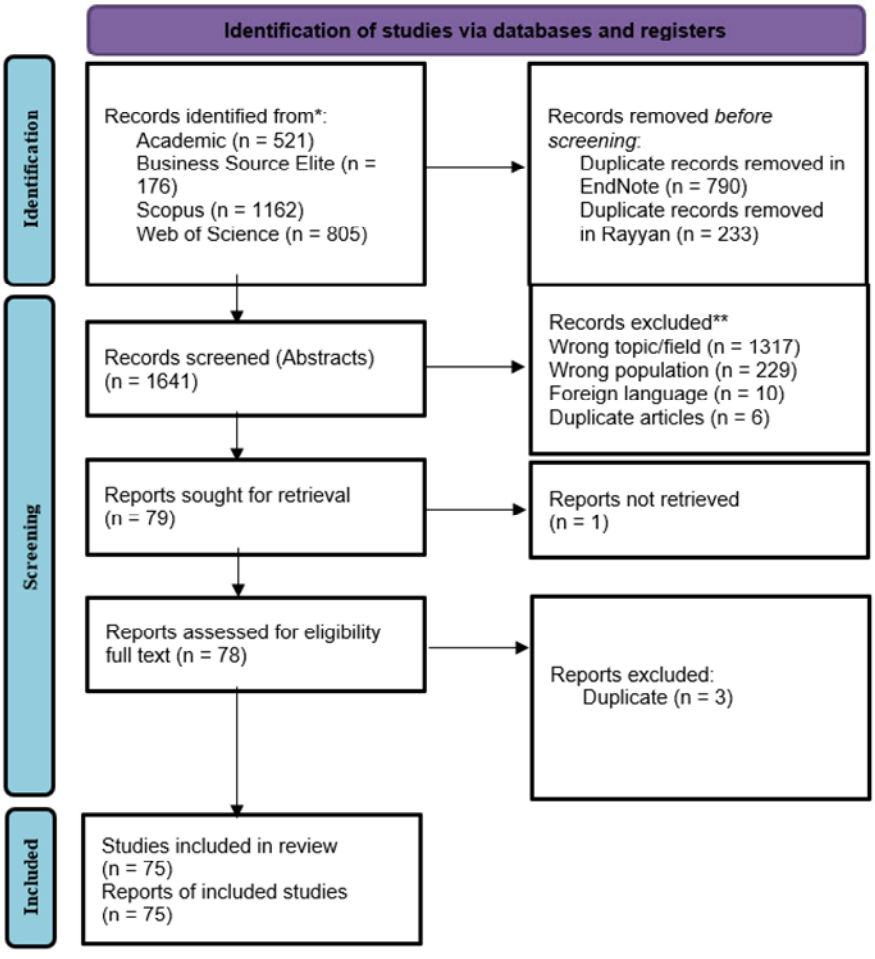
Before conducting a regular database search, the research team conferred with experts in both Europe and North America concerning relevant literature and potential search terms. Such conversations spurred a 'search and incubate period' lasting approximately two months before we again met with the team of librarians to proceed.

The Business Source Elite and Academic Search Premier databases were chosen because they covered organisational studies and management sciences. Web of Science and Scopus were selected to include as many research fields as possible. The use of adjacency operators versus exact phrases and Boolean logic was considered for each word pair based on whether the terms were regular words used in many different contexts or highly specific to the relevant context. More specifically, adjacency or Boolean logic is the looser logic available for use. The more regular, the tighter we would search to minimise the use of the terms in irrelevant contexts (e.g., 'approach and avoid'). The same was applied to the truncation; we truncated where possible when we decided that

the truncation did not alter the meaning of the expression. We also considered using an extended range of words that express emotions (such as anger and joy). Still, the research team found that previous scans of the relevant literature showed that the term 'emotions' was mainly used.

We discussed several strategies for limiting the number of word pairs. The primary strategy was to AND them with terms for the workplace or management as opposed to violence at home. We also decided to exclude, if possible, any abuse, as defined by unsolicited, violated standards of appropriate conduct resulting in emotional harm, typical in relationships of unequal power (Lutgen-Sandvik, 2003). After viewing both search results, we decided to AND word pairs with different terms for management. Furthermore, the results were limited to peer-reviewed studies. This timeframe was limited to Cannon's use of fight-or-flight in 1932. Each potential concept or phrase was checked with alternative searches, e.g., 'approach* and,' 'silence versus,' and 'or voice,' and the like. An active search for synonyms and antonyms was integral to this process.

Figure 2 PRISMA flow diagram for the targeted literature review (see online version for colours)



4.5 Study selection

Academic search premier listed 521 articles, business source elite 176 articles, Scopus 1,162 articles, and web of science 805 articles; in total, 2,664 articles. Duplicate records were removed before screening using EndNote (790). The screening and reading processes were logged into Rayyan, an online tool for systematic literature reviews, making it easy for the three researchers to conduct anonymous reviews (Ouzzani et al., 2023). After importing 1,874 articles, 233 duplicates were removed from the list. The screening process began with 1,641 unique records.

After reading the abstracts separately, the three researchers agreed to exclude 1,317 articles because they were about the wrong topic. This exclusion process was consistent, with only 14 exceptions resolved through discussion. Of these 14 disputed articles, only one was included because it aimed to study emotions and behaviours. The others did not. Two hundred twenty-nine articles were excluded because they focused on children or dysfunctional populations. Ten articles were excluded because they were not written in English, and six were previously undetected duplicates.

Thus, the librarians were tasked with retrieving 79 selected research articles, one of which was unavailable. While reviewing the 78 articles with full-text screening, another three were published in double format, leaving 75 as the final number in our review (see Figure 2).

4.6 Charting the data

Charting the data organised and systematised the 75 articles to help answer the research question. Hence, we extracted relevant information from the selected studies in the matrix while reading them in detail. In this matrix, we gathered the following data: authors, title, publication year, publication type, geographical location, cultural context, sample size, stated contribution, fight variables, flight variables, homeostasis variables, methods, variables, hypotheses (explicitly listed and implicitly mentioned), findings or outcomes, and limitations (explicitly listed and implicitly inferred from the text). This screening preceded our collation, summary, and reporting of results in Part 4, the intended comparative concept analysis, Part 5, discussion, and Part 6 conclusion, where we analysed the charted data to identify patterns, themes, and gaps in the existing literature.

5 Analysis

Cannon's fight-or-flight was primarily aimed at emotional excitement and behaviour (Cannon, 1929). Emotions, as antecedents to behaviour, have been the subject of many studies; for instance, Charles Darwin (1872) studied how both humans and animals feel rage (anger) and fear (anxiety) (Spielberger et al., 1995). However, this topic of interest dates back in time. The preferred term is 'pathos' (Brinton, 1988), which originates in Greek philosophy. Moving from ancient rhetorical philosophy all the way forward to the early nineteenth century, Cannon's use of fight-or-flight (1914–1929) was somewhat mixed. His reference to these terms varies with phrases such as 'conflict and flight,' 'struggle and flight,' and the like. His authorship appears inconsistent, particularly in his early mentioning of these phenomena. As an essential precursor to the analysis of the seven word pairs, Cannon (1932) introduced 'homeostasis' – a term he used to describe

the body's ability to maintain a stable internal environment, even when faced with external challenges. This concept was based on the earlier work of the French physiologist Claude Bernard (1865), who coined the term 'milieu intérieur' in 1865 to describe the constancy of the internal environment. Cannon (1932) further developed Bernard's ideas and popularised the concept of homeostasis. Thus, each word pair was analysed related to fight, flight, and homeostasis as a balancing middle.

5.1 Word pair no. 1: express vs. suppress

James Gross's (1998) integrative review led to the development of 'The process model of emotion regulation,' which provided insights that have been elaborated in much scholarly research. This model includes, among others, the expression and suppression of emotions. *Emotional expressivity* is defined as the 'behavioural changes that typically accompany emotion' or 'to manifest […] impulses behaviourally,' such as smiling, frowning, crying, or storming out of the room [Gross and John, (1997), p.435]. (For all word-pair definitions, see Table 2). This definition seems to be dominant in most studies relevant to this analysis. In contrast, *emotion suppression* has been defined as the conscious inhibition of emotionally expressive behaviour while being emotionally aroused (Gross and Levenson, 1993). Both definitions are tautological. However, they are referenced here as authoritative because they are widely accepted.

Many similarities have been found between expression and suppression and between fight and flight. Fleeing, or flight, is synonymous with suppressing emotions and not wanting to show how one feels. Fighting is the same as expressing emotions; that is, not holding back by letting go of any control or filter of outbursts. However, considering the full spectrum and continuum, it is clear that expressed versus suppressed emotions do not have a defined neutral or middle ground. Indeed, there are degrees of expression or suppression of emotions; however, research has not yet determined the balance between them. Bonanno et al. (2004) might have come close, suggesting that being *flexible* is to 'balance,' express, and suppress. Gross and Levenson (1997) confessed that 'there is a middle ground between these two perspectives, one that holds that there is an optimal level of emotional regulation – somewhere between total strangulation and completely unfettered expression' (emphasis added) [Gross and Levenson, (1997), p.96]. Recent developments in this field suggest an increased resolution of how strategies are translated into tactics widened viewing angle for interpersonal emotion regulation extension of the timescale of affective experiences (Petrova and Gross, 2023).

5.2 Word pair no. 2: deep acting vs. surface acting

Unlike the previous word pair, the potentially missing balance between extremes *has* been provided as 'emotional labour' in what may be considered a parallel research stream. *Emotional labour*, also referred to as emotional work or emotion management, was defined by Hochschild (1983) as the process of managing feelings and expressions to fulfill the emotional requirements of a job. Humphrey offered an update of the definition as 'the act of displaying the appropriate emotion […] to create a publicly observable facial and bodily display [guided by favourable display rules]' [Humphrey et al., (2015), p.749].

Table 2 Concepts of balance defined with opposing word pairs referenced in the text

Fight: An urgent demand for struggle [Cannon, (1915), p.123]	*Homeostasis: Steady state [or] balance [Cannon, (1929), p.399]*	*Flight: An urgent demand for escape [Cannon, (1915), p.123]*
Express: behavioural changes that typically accompany emotion or to manifest […] impulses behaviourally [Gross and John, (1997), p.435]	N/A	Suppress: Reduced or non-expression of emotions or risk perceived information when in an emotional state [Gross, (1998), p.283]
Deep acting: 'Deceiving oneself as much as deceiving others […and the] display is a natural result of working on feeling; the actor does not try to seem happy or sad but rather expresses spontaneously real feeling[s] that have been self-induced' [Hochschild, (1983), p.35]	Emotional labour I: 'The process of managing feelings and expressions to fulfill the emotional requirements of a job [guided by feeling rules]' [Hochschild, (1983), p.17] Emotional labour II: 'The act of displaying the appropriate emotion [Ashforth and Humphrey, (1993), p.90] …to create a publicly observable facial and bodily display [guided by positive display rules]' [Humphrey et al., (2015), p.749]	Surface acting: 'Disguising what we feel [by learned intervention…] pretending to feel what we do not' [Hochschild, (1983), p.33]
Aggressive I: 'Disrespecting other person's rights and dignity through the use of hostile verbal content and vocal characteristics' (Alberti and Emmons, 1970)	Assertive I: The ability to speak and interact in a manner that considers and respects the rights and opinions of others while also standing up for your own rights, needs, and personal boundaries [Alberti and Emmons, (1970), p.23]	Submissive I: Allow others to violate your rights and needs without expressing your own feelings or beliefs [Alberti and Emmons, (1970), p.27]
Aggressive II: 'Employing coercion through verbal and nonverbal threats and punishments to gain compliance' [Hollandsworth, (1977), p.347]	Assertive II: 'The ability to adequately express oneself while maintaining social gains' [Vagos and Pereira, (2018), p.133]	Submissive II: 'Not saying what you want or saying it in such an ineffective way that you are not really heard' [Doverspike, (2013), p.1]
Engagement I: 'The harnessing of organisation members' selves to their work roles, […] express[ing] physically, cognitively, and emotionally during role performances…' [Kahn, (1990), p.694]	N/A	Disengagement I: 'The uncoupling of selves from work roles, […] withdraw[ing] and defend[ing] physically, cognitively, and emotionally during role performances' [Kahn, (1990), p.694]
Engagement II: 'A positive, fulfilling, affective-motivational state of work-related well-being that is characterised by Vigor, dedication, and absorption' [Bakker et al., (2008), p.187]		Disengagement II: 'Distancing oneself from one's work, work object, and work content' [Bakker and Demerouti, (2008), p.210]

Note: Definitions marked I = early development stage, definitions marked II = more current.

Table 2 Concepts of balance defined with opposing word pairs referenced in the text (continued)

Fight: An urgent demand for struggle [Cannon, (1915), p.123]	*Homeostasis: Steady state [or] balance [Cannon, (1929), p.399]*	*Flight: An urgent demand for escape [Cannon, (1915), p.123]*
Avoidance: 'Moving away from something: A competing force of negative valence acting upon an individual in parallel (Lewin, 1935, p.93)	Approach: 'Moving toward something; A competing force of positive valence acting upon an individual in parallel [Lewin, (1935), p.93]	Avoidance: 'Moving away from something; A competing force of negative valence acting upon an individual in parallel [Lewin, (1935), p.93]
N/A	Voice I: 'Any attempt at all to change rather than escape from an objectionable state of affairs' [Hirschman, (1970), p.30]	Silence I: 'Loyal employees are confident that things will improve, leading them to remain in their organisations and suffer in silence [Hirschman, (1970), p.38]
	Voice II: 'Discretionary communication of ideas, suggestions, concerns, or information about problems to a person or persons who might be able to take appropriate action' (Morrison, See, Pan, 2015, p. 549)	Silence II: 'Conscious withholding of potentially important information, suggestions, or concerns, from those who might be able to act on that information' (Morrison et al., 2015, p. 548)
Violence: Any action taken to compel others to see things from your point of view [Patterson et al., (2011), pp.48–50]	Dialog: Any action taken to make it safe for others to share their meaning as well as respectfully and honestly sharing your information, thoughts, experiences, and feelings [Patterson et al., (2011), pp.48–50]	Silence: Any action taken to withhold information from the pool of meaning [Patterson et al., (2011), pp.48–50]

Note: (Definitions marked I = early development stage, definitions marked II = more current).

A slightly different paradigm is found comparing surface versus deep acting or acting versus not acting, compared to suppression and expression. If we are to stay true to the original definitions Hochschild (1983) provided in the context of fight-or-flight. In this case, surface acting can be compared to flight, that is, *disguising one's true feelings* or pretending to feel what we do not, and deep acting to fight, that is, by not trying to feel happy or sad, changing feelings to *align them with organisational expectations* (Sutton, 1991). In both respects, it can be argued that the similarities are closely related to the former. However, acting adds valuable emphasis to, for instance, cognitive or emotional dissonance and loss of one's authentic self (Humphrey et al., 2015). Furthermore, considering deep acting more closely, how one engages in various behaviours to stimulate the desired emotions, that is, seeking balance, is arguably not the same as fighting (Humphrey et al., 2015). This difference shows that deep acting is a form of emotional labour that seeks to summon 'correct emotions.' Thus, to some degree, it is a digression from homeostasis. Strictly speaking, it cannot be fully classified as balanced, nor can it be categorised as unfiltered or uncontrolled like fight. Hence, based on the criteria of this analysis, deep acting has elements of balance but contains the inner conflict of still having to change emotions that one may not fully possess. The argument is straightforward. Through deep acting, one can emotionally 'fight internally' and move *toward* balance. This shift could potentially be visible to outsiders. Furthermore, emotional labour misses the mark of homeostasis by triggering emotive dissonance (Ashforth and Humphrey, 1993; Riforgiate et al., 2021) or emotional contagion (Barsade et al., 2018).

5.3 Word pair no. 3: aggressive vs. submissive

Assertive behaviour is closely related to emotional labour. They may even be considered conceptual twins or perhaps siblings, or close relatives. *Assertiveness* (also known as *assertion*) was popularised by Alberti and Emmons (1970). It is the ability to speak and interact in a manner that considers and respects the rights, opinions, and personal boundaries of others while also standing up for one's own (Lange et al., 1976). While emotional labour reaches out to accommodate others, assertiveness can be said to protect itself, allowing service workers to respond to uncivil customers with diplomatic politeness or even tactful reprimands (Henkel et al., 2017; Lee et al., 2021). The balance of assertiveness shows that emotional labour and, for example, customer service need not be one-sided (Winer et al., 2024).

The opposing extremes of assertiveness are predominantly defined in the literature as submissive (also nonassertive or passive) versus aggressive (also passive or aggressive) (Alberti and Emmons, 1970). *Aggressive* or hostile behaviour can involve saying what one wants clearly and directly but without the element of empathy or caring found in assertiveness. *Submissive* means that one's rights are violated. Submissive or non-assertive behaviour involves not saying what one wants or expressing it in such an ineffective way that one is not heard (Doverspike, 2013). Considering Cannon's (1915) original extremes, aggression approximates the fight side of the dichotomy, and submissiveness may resemble flight.

However, several studies have shown that Cannon's (1915) fight dimension may include both assertion and aggression. Researchers have measured the mixed outcomes of how assertions and aggression vary interchangeably to produce compliance versus anger (Hollandsworth and Cooley, 1978; Hull and Schroeder, 1979; Marriott and Foster, 1978).

In the quest to separate assertive behaviour from aggressive behaviour, a lively debate ensued from the mid-1970s to the mid-1980s (Rakos, 1991). Lange et al. (1976) underscored how appropriate conflict assertion, unlike aggression, shows *respect* for others through nonhostile verbal content and vocal characteristics, strengthening relationships and reducing negative emotions. In contrast, Hollandsworth (1977) critiqued such definitions for being aimed at consequences rather than strictly objective behaviour. Instead, he suggests that the distinction lies in coercion, such as verbal disparagement, name-calling, and threats. This view was challenged by Alberti (1977), who pointed out that behaviour must be considered in a larger context and thus includes intent. Rimm and Masters (1979) widened the scope by considering assertion as part of an escalation process. They proposed that threats, such as legal action, might be appropriate assertive instead of aggressive behaviour in stepwise communication with an opposing party. This definition debate illustrates how the concept was and may still be somewhat unclear, as dust never seemed to settle on an agreed formulation. Research on assertiveness is ongoing from many perspectives, such as nonverbal communication (Conway et al., 2023).

5.4 Word pair no. 4: engage vs. disengage

Like aggressive versus passive, the word pair, engaged versus disengaged, adds to the essential dimensions of fight and flight. Kahn (1990) defines personal engagement and disengagement. He defines *personal engagement* as harnessing organisation members' selves to their work roles, […] express[ing] themselves physically, cognitively, and emotionally during role performance. *Personal disengagement* is the uncoupling of selves from work roles, […] withdraw[ing] and defend[ing] themselves physically, cognitively, and emotionally during role performances [Kahn, (1990), p.694].

A closer study of Kahn's (1990) concepts underscores how his work was inspired by Goffman's (2002) suggestion that individuals can be seen as theatrical performers or audience members. Goffman's analogous parallels can, in turn, be traced back to, e.g., Adam Smith's (1759) 'actor versus spectator.' In these concepts, one may appreciate the kinship between fight and flight. Kahn's 'physical, cognitive, and emotional expression' resembles fighting and 'withdrawing and defending' can be said to resemble flight. Although unclear, the degree to which one engages or disengages carries the same semantic meaning: engaging actively in battle or disengaging to avoid conflict.

Interestingly, Kahn (1990) and others did not offer a balancing term equivalent to homeostasis. However, in this research tradition and body of knowledge, one may point out that Adam Smith's 'impartial spectator' could be a viable candidate, an imagined third party objectively judging the ethics of one's actions (Marshall, 1984). However, the theory of self-awareness or self-focused attention has not been explicitly positioned at the centre of this continuum (Duval and Wicklund, 1972). Hence, engagement versus disengagement neither has a middle ground nor seems to be an extreme version of fight-or-flight, like other word pairs. Recent research on interpersonal conflict has implied degrees of engagement (Somaraju et al., 2024).

5.5 Word pair no. 5: approach vs. avoidance

The original conflict of the soul torn between the two horses of a chariot, an analogy presented by Plato, was retold over time (Williams, 2001). One such perspective is

approach versus avoidance. Lewin (1935) introduced these paired opposites while studying children's responses to objects and tasks.

> "A conflict is to be characterised psychologically as a situation in which oppositely directed, simultaneously acting forces of approximately equal strength work upon the individual" [Lewin, (1935), p.122].

However, the basic notion of approach-avoidance conflict had already been defined, even before Plato. Democritus (460-370 B.C.) and Aristippus (435-356 B.C.) espoused an ethical hedonism that proscribed 'the *pursuit of pleasure* and the *avoidance of pain* as the central guide for human behaviour' [Elliot and Thrash, (2001), p.141]. Therefore, in his original work, Lewin raised three types of conflicts:

1 standing between two positive valences

2 standing between two negative valences

3 standing between a positive and a negative valence.

Two of Lewin's simple exemplars of the third type of conflict were: 'A child may wish […] to stroke a dog which it fears or eat a forbidden cake' (Lewin, 1935). This definition, of course, does not only extend fight-or-flight but sounds more like Bentham (1748–1832), who wrote:

> "Nature has placed humankind under the governance of two sovereign masters: pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what we should do […] they govern us in all we do, in all we say, in all we think' [Bentham, (1994), p.11]].

Further development of the approach-avoidance concept has enriched the parallels to fight-or-flight. According to Corr (2013), both fight *and* flight are forms of avoidance. Hence, approach and avoidance are not constructs that resemble fight-or-flight as opposite behaviours. Instead, they reflect how approach provides balance. This sameness of contrasting versions of avoid is further emphasised by Adams et al. (2006, p.180) by how 'anger (fight) and fear (flight) in contemporary theories of emotion attribution […] are virtually indistinguishable.'

The concept of stress is closely related to approach-avoidance (Roth and Cohen, 1986), as attributed to Hans Selye (1946), who was also admittedly influenced by Cannon (Jackson et al., 2014). Finally, an essential part of this analysis should include the dimension of emotion inhibition (Freud, 1961), which has been applied to child development (Kopp, 1989; Saarni, 1990; Thompson, 1991) and in combination with this approach (Morrison et al., 2015). In addition, in their research on power as a fundamental concept of social science, Keltner et al. (2003) stated that the approach concerns increased energy and emotion. In contrast, inhibition concerns decreased motivation and reduced activity levels. Thus, apart from branching out into related concepts, the original definition or understanding of approach-avoidance has remained the same, possibly because of its simplicity. Recent research on approach-avoidance suggests that efforts to avoid interpersonal conflict, as part of hindrance demand crafting, may lead to decreased disengagement at work (Holman et al., 2024).

5.6 Word pair no. 6: voice vs. silence

Brinsfield et al. (2009) highlighted that voice was conceptualised in an initial wave roughly from the 1970s to the 1980s. A second wave followed the speaking-up behaviour from the mid-1980s to 2000. To date, a third wave has examined voice in a more nuanced fashion; for example, how not speaking up may implicitly signal consent (Bohns and Schlund, 2020). Looking back to Gestalt psychology in the late 20th century, voice would be 'figure' and silence the equivalent of 'ground' (Watzlawick et al., 2011). This word pair did not consistently appear until approximately 2000. Dyne et al. (2003) conceptualised employee silence and voice as multidimensional constructs. Even then, gathering data and observations about groups remained a collective idea, rarely applied to individuals. Voice and silence were coined by Hirschman's (1970) work to define the silence or voice of employees with exit, voice, and loyalty but gave rise to much debate. *Silence* is the conscious withholding of potentially important information, suggestions, or concerns from those who may act on the information. *Employee voice behaviour* is the discretionary communication of ideas, suggestions, concerns, or information about problems to a person or people who can take appropriate action (Morrison et al., 2015). Recent research highlights that voice skills are essential for workers, especially in nontraditional employment setups where workers may not have a familial relationship with their supervisors because of the nature of their contracts. Such arrangements can lead to feelings of isolation, stigmatisation, and an outsider's identity, which might encourage silence and diminish interest in workplace issues, owing to the potential backlash from voicing concerns (Oyetunde et al., 2024).

5.7 Word pair no. 7: violence vs. silence

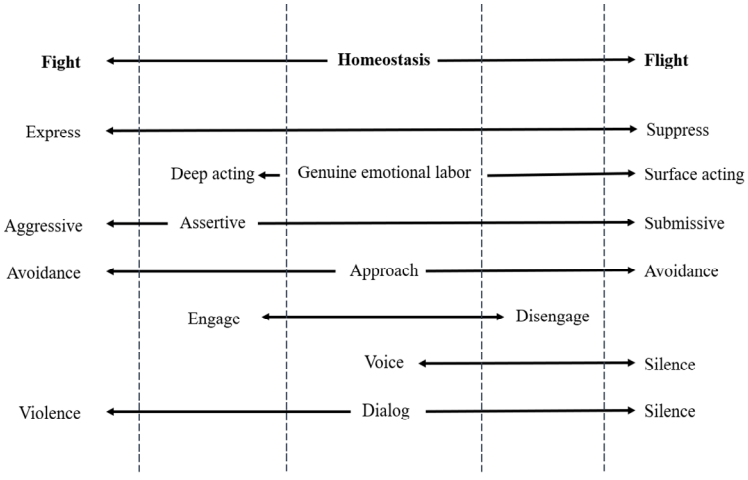
Violence versus silence, or rather 'silence and violence,' has been a trending expression among executives ever since the first edition of 'crucial conversations' was published in 2007 (Patterson et al., 2011). In this word pair, *silence* is any withholding of information from a pool of meanings. The *pool of shared meanings* is the balance of dialog. It involves any action taken to make it safe for others to share their meaning and share information, thoughts, experiences, and feelings respectfully and honestly. Thus, silence is clearly distinguished from organisational silence to being individual. On the other end of the continuum, *violence* is, therefore, the opposite, defined as any action taken to compel others to see things from another's point of view (Patterson et al., 2011).

Thus, comparing the last two-word pairs is informative. The 'voice and silence' literature has built on similar physiological limitations for decades. However, it has failed to identify specific, measurable actions and behaviours (Milliken and Morrison, 2003; Morrison, 2014; Morrison and Milliken, 2000, 2003; Rosen and Tesser, 1970; Rosenberg and Chopra, 2015), which has richly surfaced by exploring 'violence and silence'.

However, the combination of 'silence and *voice*' offers a perspective different from 'silence and *violence*.' Silence and voice, as opposing variables, emphasise speaking and not speaking up. This spectrum is relatively narrow compared with that of silence and violence. The implication is that voice is equivalent to dialog in a continuum of silence and violence (see Figure 3). The extent to which voice can be considered neutral is a possible way to view these interrelated constructs. If this argument were to stand, with dialog as the focal point, silence and voice are not opposites but merely one side of the spectrum, ranging from flight to homeostasis, excluding fight entirely. Thus, by focusing

not only on whether, why, or what one should decide to speak up but also on how this behaviour takes place, this alternative perspective may reveal antecedents and outcomes that accompany the detection of new *individual* behaviour patterns.

Figure 3 Comparison of fight-or-flight related concepts



Our analysis summarises how each word pair is compared to Cannon's original fight, flight (1915), and homeostasis (1932) (see Figure 3). Noting how word pairs share many similarities but are not identical is instructive. We suggest that a more holistic view of these concepts enhances our understanding of each word pair and all of them together, making it easier to apply them across different dimensions of research.

6 Discussion and conclusions

The word pairs subjected to our analysis have spawned several concepts *within* each concept that were excluded or ignored for practical purposes. We decided to present word pairs in what we deemed a natural, logical sequence to underscore how they overlap and are related, *not* chronologically organised. However, a historical timeline (see Figure 4) offers a bird's eye view when the word pairs surfaced.

All these concepts, excluding Lewin's 'approach and avoid,' (as he was Cannon's contemporary), may have surfaced after an apparent incubation period lasting from approximately 1930 to 1970. Reasons for such a 'concept vacuum' in time remain unclear.

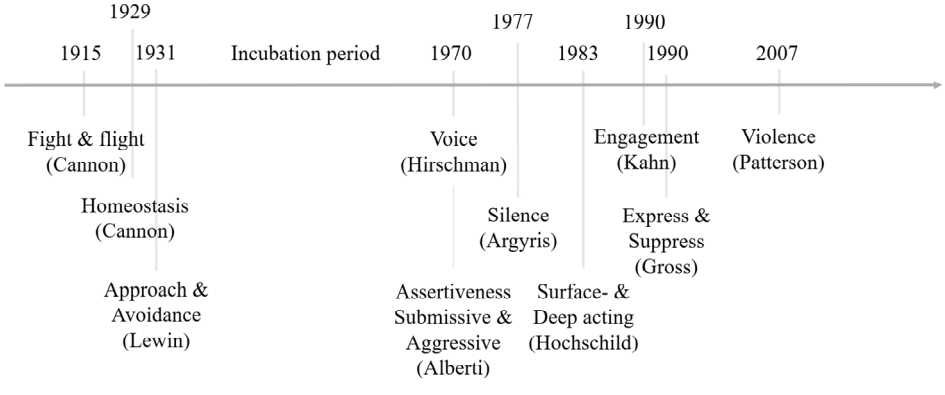
Furthermore, when comparing concept antecedents and outcomes, we suggest a trend. The literature consistently depicts concepts related to fight as predominantly beneficial and those related to *flight* as primarily detrimental. We consider presenting a counterargument to be appropriate at this point. Oversimplification of the advantages and disadvantages is extremely challenging. If anything, our conclusion must be that balancing emotions and behaviour toward the middle is usually the best course. Especially since the mid-1980s, research indicates that emotions, even strong ones, and their resulting behaviours can be extremely valuable (Damasio, 1994; Druskat and Wolff,

2001; Fredrickson, 2004; Frijda, 1986; Goleman, 1996; Izard, 2007; Pressman and Cohen, 2005). Jones suggests that 'moods and emotions represent useful information, and [that] this information may become blurred or lost if people regulate their moods and emotions too actively' (Jones, 2022). If, however, any fight-or-flight behaviour is seen and heard, which Jones refers to as 'affect elevation,' we consequently may seldom see extremes but engage more frequently in 'collective sensemaking' (Jones, 2022). To paraphrase this learning point, we may benefit from balancing our communication in conflict around a more sensible 'middle' or homeostasis. We do so by becoming more aware of *emotions in ourselves* and the *behaviour of others*. Firstly, let us consider 'emotions in ourselves.' The literature suggests that we do so by suspending judgment. We should delay acting based on our assumptions, the primary drivers of our emotions. If we look for more data while 'in an adrenalin-drunk condition,' our slowed thinking regulates emotions. We discover there may be no need to be upset, which will affect behaviour [Patterson et al., (2011), p.108–111]. Secondly, 'behaviour of others': When we witness fight-or-flight-like behaviours, which our literature review explicitly has uncovered, such scenarios offer an opportunity to talk about feelings, as this behaviour is triggered by strong emotions [Jones, (2022), p.22]. In both instances, emotions and behaviours pivot toward a more amiable middle, making communication in conflict less strained over time. Cannon's original fight-or-flight (1915) branched out into at least 52 word pairs, seven of which formed the basis for substantial research streams that are not necessarily compatible. In addressing the pivotal research question, 'How has fight-or-flight developed into different word pairs across research streams?' It becomes evident that the opposites termed 'violence and silence' stand out as different among the seven scrutinised word pairs. This word pair closely mirrors the primal fight-or-flight response, a mechanism deeply ingrained in our instincts for survival. In addition, the word pair offers a balancing middle, i.e., dialog, which is parallel to homeostasis. Cannon's seminal work highlights that these responses have been honed over millennia, serving as immediate reactions in our ancestral battle for existence [Cannon, (1932), p.186], and violence and silence most clearly relate to both

1 *emotional* excitement

2 a wide array of *behaviours*.

Figure 4 Timeline of related concepts to fight-or-flight



In a contemporary context, Patterson et al. (2011) draw parallels to communication behaviours, where the physiological underpinnings of fight-or-flight manifest in the form of silence – akin to withholding information as a defensive posture – and violence – the offensive counterpart, where one aggressively imposes one's viewpoints on others.

Thus, violence and silence stand apart, not merely as communicative strategies in conflict but as fundamental expressions of our instinctual legacy in the face of confrontation.

7 Contribution

This analysis serves as a bridge to connect findings from research streams that have adopted fight-or-flight responses (Bracha et al., 2004; McCarty, 2016). Surprisingly, it also serves a broader purpose. Compared to fight-or-flight concepts, violence, and silence are brought to the forefront as everyday work-life interactions, which explains how we deal with conflicts in professional settings. Violence and silence surface as collective umbrella terms for all these word pairs to understand both micro- and macro-behaviours (Patterson et al., 2011). Unlike traditional interpretations of silence, which often connote passivity or voicer humility (Duan et al., 2024), this nuanced perspective recognises silence as a deliberate maneuver to withhold information (Patterson et al., 2011). This redefinition aligns silence with a form of nonverbal violence in which the absence of contribution becomes a tactical move in navigating workplace politics or purposeful ostracism (Robinson et al., 2012). On the violent side, leaders employ 'direct and indirect strategies' to garner support for their causes [Lopez, (2020), p.9]. Violence and silence extend beyond the mere resolution of conflict. They offer insights into the broader spectrum of interpersonal interactions, contrasting choices individuals make in their communication styles – ranging from aggressively imposed ideas to the strategic withholding of input (Patterson et al., 2011): whether 'intimidating and humiliating, or […] passive – aggressive […] when [colleagues] are ignored or excluded' (Mehraein et al., 2023). This perspective reflects the deeper undercurrents of power, influence, and emotionality embedded in workplace relations (Raven, 2015). By examining the trajectories of these behaviours, this analysis underscores the complexity of human responses to everyday stressors, moving beyond the binary fight-or-flight paradigm to encompass a spectrum of intricate degrees of interaction (Porges, 2007). Hence, violence and silence enrich the theoretical landscape of workplace communication, especially regarding how they represent at least 52 other word pairs, as seen in this analysis. By dissecting the development of these concepts, this study provides a framework for recognising and addressing the subtle and often overlooked aspects of conflict and cooperation (van Bunderen et al., 2017). In doing so, this study provides a new lens through which to examine and understand better the interplay between power, communication, and behaviour in the professional realm.

Finally, dialog emerges as an equilibrium in modern workplaces when one moves away from destructive violence and silence. This move toward open exchanges marks a preference for collaborative problem-solving and communication (Morrison, 2023). Dialog builds understanding and trust, creating a culture in which opposing perspectives are valued, and conflicts are resolved through healthy debate and discussion (Tjosvold et al., 2014). As with rhetoricians in the past, neither those who scream the loudest

(violence) nor form backbiting alliances (silence), but those who present the best, most logical arguments should win.

8 Limitations and future research

A fundamental limitation of this comparative concept analysis is its focus on individual excitement and behaviour. By comparing only word pairs related to singular reactions, this analysis does not capture the complexity of collective behaviour in an organisational context. In groups, teams, or large organisations, responses to stress or tension can be affected by several important aspects, such as culture, group dynamics, communication practices, power structures, prevailing norms and values, and the presence of support systems, to name only a few (Greer and Chu, 2020; Kivlighan, 2021). These aspects are not considered in the proposed approach. Such macro analysis could reveal completely different response patterns. The second limitation is the restricted focus on conflict-related behaviours. Considering the many dimensions besides conflict where fight-or-flight is relevant, this research does not touch on essential subjects, such as decision-making under stress, that is, confrontational or evasive strategies when faced with high-stakes scenarios (Knoll et al., 2021). Nor does it investigate all too-frequent change scenarios, such as how employees might embrace or resist new requirements from top management. Similarly, we might have studied leadership style, innovation, creativity, and culture.

Future research could benefit from this. Extending the analysis to word pairs relevant to organisational behaviour offers a more nuanced understanding of how groups and organisations respond to stress and tension. Such an analysis could explore the dynamics of cultural norms within organisations. Most likely, word pairs different than those analysed here, which explain organisational concepts, such as ‘cooperation versus confrontation’ or ‘silence versus voice,’ would probably surface. This strategy might allow researchers to understand better *collective* fight-or-flight responses and how organisations might become more resilient, improve communication, and increase employee well-being.

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