Chapter 7
Divergence of Safety and Security

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Abstract Safety and security have similar goals, to provide social wellness through risk control. Such similarity has led to views of professional convergence; however, the professions of safety and security are distinct. Distinction arises from variances in concept definition, risk drivers, body of knowledge, and professional practice. This chapter explored the professional synergies and tensions between safety and security professionals, using task-related bodies of knowledge. Findings suggest that safety and security only have commonalities at the overarching abstract level. Common knowledge does exist with categories of risk management and control; however, differences are explicit. In safety, risk management focuses on hazards management, whereas security focuses on threat mitigation. Safety theories consider health impacts and accidents, whereas security crime and crime prevention. Therefore, safety and security are diverging as distinct professions.

Keywords Threat · Safety · Professional · Body of knowledge · Concepts, practice

7.1 Introduction

Safety and security have similar goals, to provide social wellness through the management of foreseeable risks. At the abstract level, there is little to distinguish these concepts; however, at the professional knowledge level, safety and security stem from distinct basis. Distinction arises from variances in professional standing in society, task-related knowledge categories, and importantly, occupational practice. As Jore [1] suggests, safety and security frequently use the same concepts although they have separate meaning and application. Such differing views in the concepts of safety and security raise tensions across professions. To better understand and articulate the synergies and tensions between safety and security requires a better understanding of their objectives and task-related knowledge that forms and supports professional practice.

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As society becomes more complex and its members more risk averse, there will be a greater need for increased professionalism across many occupational practice areas. Safety and security are two such occupations, where both strive for professionalism. The concepts of safety and security both attempt to achieve the same goal—improving social wellness—leading to a view that there are conceptual synergies. Consequently, it is important to establish a clear understanding of both safety and security. Therefore, this chapter poses the following Research Question: *Does the body of knowledge categories of safety and security sciences demonstrate professional divergence*?

7.2 Occupational Domains

Safety is considered within the context of Occupational Health and Safety (OHS) professional practice. Security is not so bounded, given its multidimensional [2] or multifaceted nature [1]. Therefore, security is considered within the context of Corporate Security practice, being loosely defined as the provision of protection to achieve organizations goals [3].

7.3 Professionals and Their Body of Knowledge

In contemporary society, there are many emerging professions. For these professions, their development from vocational practice to a profession is challenging, specifically in social recognition. A practice domain may be defined as an area of activity or field of knowledge, over which a cultural group has occupational influence or control [4]. A cultural domain shares systems of common meaning [5] that for a profession has been articulated and codified into a body of knowledge for group consensus.

The professional has characteristics that include agreed and enforced standards of behavior, standards of education, professional development, college of peers, and a distinct and formal body of knowledge (Interim Security Professionals [6]).

A primary characteristic of a profession is its supporting academic body of knowledge. Such a body of knowledge exhibits a systematic and inclusive structure of knowledge that has logical relationships between concepts and is predictive in function [7]. Internal structure provides predictable, consistent, and reliability in the environment so that efficacy and logic prevail in professional outcomes [4]. Academic knowledge underpins and therefore, legitimizes professional work [8].

7.4 Security Body of Knowledge

The occupation of security has yet to achieve the designated status of a profession, as it lacks the characteristics of a defined body of knowledge [7]. For example, the "current body of knowledge in the security field is to a large extent fragmented and segmented" [1].

Nevertheless, educators and industrial groups [2, 4] have begun to develop a distinct body of knowledge. For instance, ASIS International has run an annual practitioner/academic symposium to develop core knowledge categories. Their outcome has been directed at United States universities in developing tertiary courses (ASIS International, 2003). In 2009, ASIS International developed a security body of knowledge (Table 7.1) with 18 knowledge categories (ASIS International, 2009, p. 44).

Brooks [2] put forward 13 knowledge categories to define security, divided into core and supporting knowledge categories. Core knowledge included security risk management, business continuity and response, physical security, security technology, personnel security, and industrial security, whereas supporting knowledge included but was not limited to law, investigations, fire life safety and safety. The study had extracted these knowledge categories from a critique of 104 international tertiary security courses from Australia, South Africa, United Kingdom, and United States. These knowledge categories were integrated and formed into a security framework [7]. The framework considers the breadth of security, whereas traditional security knowledge has generally focused on electronic, manpower, and physical security. In contrast, more mature professions selectively draw from related disciplines to define their specialization [9].

Another study linked ASIS International with academia to produce a tiered approach to security. Extending from Brooks, the Enterprise Security Industry

Table 7.1 ASIS international symposium security model

ASIS international security model		
Physical security	Personnel security	Information security systems
Investigations	Loss prevention	Risk management
Legal aspects	Emergency planning	Fire protection
Crisis management	Disaster management	Counterterrorism
Intelligence	Executive protection	Violence in the workplace
Crime prevention	CPTED	Architecture and engineering

(ASIS International, 2009, p. 44)

Table 7.2 Security professionals tasks, knowledge areas, and learning objectives

Professional task	Knowledge categories	Learning objectives
Diagnosis	Concept of security, law, security risk, assessments, survey	Contextualize security risk of organization
Inference	Security theories, physical, prevention, human factors, planning, and design	Comprehend and apply physical security system
Treatment	Security technology, detection, physical, delay, response, and procedural	Recommend and design protection system
Professional practice	Information, business, design, project, contract, and research skills	Employ knowledge to achieve objectives

Adjusted from [20]

Model [10] used a five-tier model with tier-four being industry-wide technical categories that included risk, personnel security, physical, cyber, investigations and crisis management.

A recent study [4] investigated security knowledge using a cultural domain analysis to develop physical security knowledge. As Coole et al., states, "physical security lies within the vocation of security [where] the physical security practitioner provides protective advice" (2017, p. 2). The study articulated the security professionals' knowledge areas, supported by learning objectives (Table 7.2).

These studies are not comprehensive; however, they demonstrate that there is a corporate security body of knowledge developing and that over time, a level of consensus could be gained. As Criscuoli acknowledged, security is not intuition or common sense; rather, it contains a complex body of knowledge that requires the ability to prescribe appropriate security measures for specific circumstances [11], p. 99).

7.4.1 Synthesis of Corporate Security Knowledge Categories

From these security bodies of knowledge studies, a summary of the more consensual knowledge categories are tabulated (Table 7.3).

7.5 Safety Body of Knowledge

As with security, safety has yet to achieve designated professional status that has a robust supporting academic discipline. As SIA states "health and safety is still an emerging profession that has not historically been well defined, locally or globally"

Table 7.3 Corporate security knowledge categories

Corporate security categories	
Knowledge	Descriptor
Threats and risks	Legislation and regulations; Causation and intent in crime; Security and criminology theories, models and strategies in crime prevention; Risk and security risk management; Human factors
Threats and risks controls	Diagnose, infer, and treatment controls; Physical security controls; Security technology controls; Personnel security controls; Cybersecurity and information controls; Workplace assessment, surveys, and audits; Workplace design and planning; Business Continuity Management, in incident, crisis, emergency, and recovery response
Security management	Security management, organizational culture, and societal context; Threat and risk assessment; Decision-making in risk; Monitoring, evaluating, and validating controls; Policy and procedures; Specific industrial risks, controls, and regulations; Governance
Underlying technical and behavioral discipline	Systems, human, and technology as a biological system; Social and individual psychology; Engineering and technology
Professional practice	Security information; Communication, consultation, design, and change; Organizations, project management, contract management, strategic and operational planning, business imperatives

Adjusted from [7, 10, 20]

[12]. Consequently, safety lacks a body of knowledge, where there are "substantial variations in OHS courses provided by [Australian] universities" [13] and "poor professional boundaries across the safety profession" [13].

Within the Australian context, the two more significant bodies of knowledge works have been published by the Safety Institute of Australia Ltd (SIA) and International Network of Safety and Health Practitioner Organisation (INSHPO). The SIA presented an Occupational Health and Safety (OHS) professional educational program through the Model of OHS Practice [14]. As Pryor states, this "resulted in the development and publication of the OHS body of knowledge" [15], p. 5). The intent of the Model of OHS Practice was to gain Australian university accreditation to support the professional practice of safety (Table 7.4).

The International Network of Safety and Health Practitioner Organisation (INSHPO) developed the OHS Professional Capability Framework to provide a

Table 7.4 SIA model of OHS practice

SIA model of practice components	
Consultation and building relationships	Working in an organizational context
Gather information	Apply conceptual framework
Understand the problem/situation	Diagnose/articulate thinking
Develop options for action	Decide on options for action
Operationalize	Implement actions
Monitor implementation	Evaluate change
Evaluate professional practice	Report to key personnel

Adjusted from [14]

"consensus-based tool developed to promote a higher standard of capability for OHS professional" [16]. The framework articulates OHS professional capability, where "capability" is defined as "the applied theoretical knowledge that underpins professional practice with industry-specific knowledge" [16]. The INSHPO framework is a matrix that is divided into six knowledge categories (Table 7.5), to tabulate "underlying knowledge needed to perform those tasks" [16].

These safety studies are not comprehensive; however, they do demonstrate that there is a developing international body of knowledge that is gaining a level of consensus. Furthermore, there is a clear drive by the relevant professional safety associations to integrate tertiary education within the bodies of knowledge.

7.5.1 Synthesis of Safety Knowledge Categories

From these past safety bodies of knowledge studies, a summary of the more consensual knowledge categories are tabulated (Table 7.6).

7.6 Comparison of Safety and Security Knowledge

The synthesis of knowledge tables (Tables 7.2 and 7.6) was merged to articulate knowledge categories across the two professions. There appeared to be a distinct alignment of knowledge with risk management, controls, management, and professional practice. In contrast, there were polarities with hazards and threats, technologies, and underlying theories. Commonalities in knowledge, at a cursory level, demonstrated a degree of professional alignment. Nevertheless, when these categories are explored as an occupational task, there is limited alignment in context, scope, and practice.

Table 7.5 INSHPO OHS capability framework

INSHPO OHS categories	
Knowledge	Topic descriptor
Hazards and risks	Causation in health, psychosocial, safety, and the environment
	Hazards in process, task analysis, methods, behavior, and factors
	Risk as uncertainty, hazards, criticality, and measure
Hazards and risks controls	Control principles, process, workplace design, barriers, procedures, and administration
	Mitigation with emergency preparedness and health impacts
Safety and health management	Safety management, organizational culture, law, regulation, and societal context
	Risk assessment and decision-making in risk
	Monitoring, evaluating, and validating controls
	OHS information management, communication, consultation, and change management
Role and function	Ethics and professional practices
Technical and behavioral discipline	Systems, human as a biological system
	Social and individual psychology
	Statistics, quantitative analysis, science, and engineering
Management science	Organizations, project management, strategic and operational planning, business imperatives

Adjusted from [16]

Both professions practice risk management, using the risk management standard ISO 31000:2018. For example, SIA OHS model of practice annotates the ISO 31000 risk standard (2012, p. 10) and in security, Smith and Brooks [7] present this risk standard. Furthermore, as Jore states, in "practical security risk management, the same perspectives and risk analysis methodologies seem to be shared across the security and safety fields" (2017, p. 15). However, safety and security's approach to risk management is distinct.

Safety considers risk from the perspective of hazards, which exposes someone to injury or loss. Whereas security considers risk from threat, being the purposive intent and capability of an adversary [7]. In other words, "the objective of security is to minimize the risk of malicious acts" [17]. Furthermore, threat is a central theme within the understanding, management, and application of security risk management [18].

Underlying theories for safety focuses on workplace, and resulting health impacts and non-malicious accidents. In contrast, security focuses on crime and crime prevention, as a result of malicious threat actors.

Table 7.6 Synthesis of OHS knowledge

OHS categories	
Knowledge	Descriptor
Hazards and risks	Legislation and standards; Cause in health, safety, and environment; Models of health impacts, fatigue, accidents, and environmental harm; Risk management; Hazard analysis methods
Hazards and risks controls	Diagnose, infer, and treatment controls; Physical controls; Process and workplace controls; Procedure controls
Safety and health management	Safety management, operationalize, organizational culture, and societal context; Law and regulation; Monitor, evaluate, and validate controls; OHS information; Communication, consultation, relationship building, and change management
Role and function	Ethics, professional practices; Evaluate practice
Technical and behavioral discipline	Systems, human as a biological system; Social and individual psychology; Statistics, analysis, science, and engineering
Management science	Project management, strategic and operational planning, business imperatives

Adjusted from [14, 16]

Safety and security practice the control of identified risks through diagnoses, inference, and treatment. For both professions, control includes process, workplace design, and physical, personnel, and procedural mitigation. Nevertheless, risk control has to consider whether the perpetrator has malicious intent or is accidental. Although safety control may also consider intentionality [1], intent is a significant factor in security controls. Therefore, security controls tend to focus on physical hardening to deter and delay, with technology to detect and personnel to respond. In contrast, safety controls involve people-focused approaches, with human-error and compliance issues [19].

Knowledge in legislation and regulations of safety and security suggests commonality; however, legislations are distinct. Within Australia, legislation provides explicit regulation of workplace safety. For example, "it is the law to employ or engage a suitably qualified person to advise on issues impacting the health and safety of your employees" (WorkSafe Victoria, n.d). In contrast, security has no legislation regarding professional practice except to gain a Police license to work in parts of the industry. At times, the legislation of safety drives the need for security in the protection of people from foreseeable events.

Security is multidimensional, incorporating many and diverse occupational practice areas. For instance, security sits on a continuum from national security to community security [4]. Therefore, the practice of security is difficult to define without explicit context. In contrast, safety is more commonly known within the workplace

as Occupational Health and Safety (OHS). Therefore, OHS has an explicit context, resulting in a far more easily definable body of knowledge, educational learning objectives, and university level accreditation.

7.7 The Divergence of Safety and Security

The chapter posed the question: *Does the body of knowledge categories of safety and security sciences demonstrate professional divergence?* At an abstract level, there are commonalities with the occupations of safety and security, not least the drive for social wellness. Without context, there is an argument that safety and security are similar occupational undertakings, which could, therefore, be supported by a common body of knowledge. Nevertheless, commonalities only exist at the abstract level.

From a knowledge and practice perspective, each occupation considers their goals from a unique and distinct context. For example with risk management, safety reviews risk from the context of hazards management, whereas security views risks from the context of malicious centered threats. Control of risks also indicated commonality, although the inference of control treatment across the occupations considers whether the perpetrator has malicious intent or is an unintended sequence of events (accidental).

To merge the professions of safety and security to a single practice only dilutes their understanding and boundaries. Nevertheless, the International Network of Safety and Health Practitioner Organisation suggests that the safety professional has a security function (2017). However, such function is generally, in life safety, a view which is supported by Smith and Brooks who state that "life safety systems take precedence over security requirements" (2013, p. 94).

It has been argued that the occupation of safety does not draw on security's distinct knowledge basis. Considered within professional practice of knowledge categories, it was found that there is explicit and supportable divergence of task-related knowledge. Although these occupational undertakings are distinct, from the stance of future professionalism, there are commonalities within professional practice. However, beyond generic professional capabilities, divergences stand out.

While safety considerations may drive the need for security, the achievement of security is through a distinct body of knowledge. Divergence between these two occupations will be driven through greater aversion to social risk, higher expectations of professions, and with both occupations striving for professional standing. Whether each occupation will emerge as a socially recognized profession remains to be seen; however, these factors will increase the divergence of occupational safety and corporate security.

7.8 Conclusion

The chapter explored the professional synergies and polarities between the safety and security within organizations, through the insight of professional bodies of knowledge. Specifically, security was considered within the context of Corporate Security, and safety within the context of Occupational Health and Safety (OHS).

At the abstract level, safety and security have distinct commonalities, although at practice there are explicit differences. Commonalities exist within professional practice, which are generic capabilities expected within all professions. At a cursory level, common knowledge exists with risk management, risk control, and underlying theories; however, differences are explicit. For example, safety risk focuses on hazard where drivers are accidental; whereas, security focuses on threat where drivers are malicious intent. Safety considers health impacts and non-malicious accidents, whereas security considers crime and crime prevention.

Consequently, within the occupations of safety and security, and supported through their professional bodies of knowledge, there are limited synergies in underlying theory and practice. Safety and security are two distinct professions that will further diverge as each pursues professional standing.

References

1. S.H. Jore, The conceptual and scientific demarcation of security in contrast to safety. Eur. J. Secur. Res. (2017)
2. D.J. Brooks, What is security: definition through knowledge categorization. Secur. J. **23**(3), 225–239 (2009)
3. K. Walby, R.K. Lippert, *Corporate Security in the 21st Century: Theory and Practice in International Perspective* (Palgrave Macmillan, Basingstoke, 2014)
4. D.J. Brooks, M. Coole, J. Corkill, Revealing community security within the Australian security continuum. Secur. J. **31**(1), 53–72 (2018)
5. J.P. Spradley, *The Ethnographic Interview*. New York Holt, Rinehart, and Winston (1979)
6. Interim Security Professionals Taskforce, *Advancing security professionals: A discussion paper to identify the key actions required to advance security*. Melbourne: The Australian Government Attorney General (2008)
7. C.L. Smith, D.J. Brooks, *Security Science: The Theory and Practice of Security*. Waltham: MA: Butterworth-Heinemann (2013)
8. A. Abbott, *The System of Professions: An Essay on The Division of Expert Labour* (The University of Chicago Press, Chicago, 1988)
9. L.J. Young, Criminal intelligence and research: an untapped nexus. J. Australian Inst. Profess. Intell. Off. **15**(1), 75–88 (2007)
10. University of Phoenix, *The Future of Security: The Enterprise Security Competency Model* (University of Phoenix, Elwood, AZ, 2015)
11. E.J. Criscuoli, The time has come to acknowledge security as a profession. Ann. Am. Acad. Polit. Soc. Sci. **498**(1), 98–107 (1988)
12. SIA, *OHS role definitions*. Safety Institute of Australia Limited (2017). Retrieved from https://www.sia.org.au/certification/ohs-role-definitions
13. C. Chua, *Changing Landscape for WHS Professionals/Practitioners in Australia*. Presentation at the Australian Universities Safety Association Conference 2015. Queenstown: New Zealand (2015)

14. P. Pryor, M. Capra, Foundation Science. In HaSPA (Health and Safety Professionals Alliance), *The core body of knowledge for generalist OHS professionals*. Tullamarine, VIC: Safety Institute of Australia (2012)
15. P. Pryor, Accredited OHS professional education: a step change for OHS capability. Saf. Sci. **18**, 5–12 (2015)
16. INSHPO, *The occupational health and safety professional capability framework: A global framework for practice*. International Network of Safety and Health Practitioner Organisations (INSHPO). Park Ridge: IL: International Network of Safety and Health Practitioner Organisations (2017)
17. Sandia National Laboratories, *Sandia Report SAND2013-0038: Security-by-Design Handbook* (US Department of Energy, Oak Ridge, TN, 2013)
18. D.J. Brooks, Security risk management: a psychometric map of expert knowledge structure. Risk Manag. **13**(1/2), 17–41 (2011)
19. D. Borys, D. Else, P. Pryor, N. Sawyer, Profile of an OHS professional in Australia in 2005. J. Occup. Health Saf. Australia NZ **22**(2), 175–192 (2006)
20. M. Coole, D.J. Brooks, A. Minnaar, Educating the physical security professional: developing a science based curriculum. Secur. J., 1–24 (2017)