MINDFULNESS-BASED COGNITIVE SAFETY (MBCS)

AND SPIRITUAL SAFETY LEADERSHIP FOR VOLUNTARY SAFETY PRACTICE

A Thesis

by

SEUNG HO LEE

Submitted to the Graduate and Professional School of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Chair of Committee,	Qingsheng Wang
Committee Members,	Yanling Chang
	Nancy J Currie-Gregg
Head of Department,	Arul Jayaraman

May 2022

Major Subject: Safety Engineering

ABSTRACT

This research proposes a method for members to voluntarily practice safety within an organization. The overall discussion is based on the concepts of *perceived safety* and *ideal safety*. *Perceived safety* is a safety naturally formed within the organizational culture because it is directly related to the survival of the organization, and members naturally perceive and act on this safety. *Ideal safety* is a level of safety at which no one is injured, which is not directly related to the survival of the organization, but is the safety that the organization must ultimately achieve, and organizations aim for this safety. Recently, the importance of voluntary safety practice by members is increasing, resulting in an increasing interest in the safety culture. However, when the safety culture is actually applied, the distinction between other safety-concepts is unclear, the organizational culture is not easy to change, and hence the safety culture is not properly improved. Therefore, this research proposes a new framework different from the existing perspective on safety for voluntary safety practice by members based on safety awareness, which consists of Mindfulness-Based Cognitive Safety (MBCS) and spiritual safety leadership. In this concept, safety within the organization is regarded as an important value separately from the organizational culture. Members should make intentional efforts separately from the organizational culture based on safety awareness. MBCS is a concept to maintain safety awareness through self-safety cognition, which is developed based on Mindfulness-Based Cognitive Therapy (MBCT) in the field of psychology. Spiritual safety leadership is a concept of forming a safety faith that serves as a fundamental foundation and fuel for members' self-safety cognition, referring to Spirituality and Religion in the Workplace (SRW) theory and spiritual leadership in the field of leadership. Based on this concept, the organization can pursue *ideal safety* and the integrity of the organization.

DEDICATION

To my committee members,

Dr. Qingsheng Wang, Dr. Yanling Chang, Dr. Nancy J Currie-Gregg

To my parents

Sangyeol Lee, Sangsun Kim

And

To my sister

Gyeonghwa Lee

ACKNOWLEDGEMENTS

First of all, I would like to express my sincere gratitude to Dr. Qingsheng Wang, my advisor, for his advice and guidance. His warm encouragement and constant support have been a great help for me to continue and complete this research. And I was able to gain essential knowledge from his class, and broaden my perspective on various studies from group meetings. During the two years with him, I was able to learn and feel a lot about life as well as research, and it was the most precious time in my life that could not be exchanged for anything. And, I would like to express my great gratitude to my committee members, Dr. Yanling Chang and Dr. Nancy J Currie-Gregg, who supported me to start and finish my research based on warm favors throughout the course of this research.

Also, I would like to express my gratitude to POSCO Inc. in South Korea, my company that supported me to do research, and to Dr. Seungho Jung in South Korea, who recommended me to Texas A&M University. And thanks also go to the department faculty and staff for making me have a great time and experience at Texas A&M University.

Finally, I would like to say thank you and love you to my parents and my sister who always trust and encourage me.

CONTRIBUTORS AND FUNDING SOURCES

Contributors

This research was supervised by a thesis committee consisting of Professor Qingsheng Wang of the Department of Chemical Engineering, Professor Yanling Chang of the Department of Engineering Technology & Industrial Distribution and Professor Nancy J Currie-Gregg of the Department of Industrial & System Engineering.

All other work conducted for the thesis was completed by the student independently.

Funding Sources

Graduate study was supported by POSCO Inc. in South Korea. Its contents are solely the responsibility of the author and do not necessarily represent the official views of POSCO Inc.

NOMENCLATURE

ACSNI	Advisory Committee on Safety of Nuclear Installations
BS OHSAS	British Standard Occupational Health and Safety Standard
ETA	Event Tree Analysis
FTA	Fault Tree Analysis
HAZOP	Hazard and Operability Study
HSC	Health and Safety Commission
HSWA	Health and Safety at Work etc. Act
IAEA	International Atomic Energy Agency
INSAG	International Nuclear Safety Advisory Group
ISO	International Organization for Standardization
MBCS	Mindfulness-Based Cognitive Safety
MBCT	Mindfulness-Based Cognitive Therapy
MSDS	Material Safety Data Sheet
NRC	Nuclear Regulatory Commission
OH&S	Occupational Health & Safety
OHSMS	Occupational Health and Safety Management System
OSH	Occupational Safety and Health
PSM	Process Safety Management
SRW	Spirituality and Religion in the Workplace
UK	United Kingdom
US	United States

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. BACKGROUND

Many organizations say safety is the most important. However, we can see that accidents still continue to occur, and safety issues are not easily solved in many organizations. Why is safety constantly a problem for organizations even though they regard safety as the most important? We could answer that safety is not a simple problem that can be easily solved because it is a combination of various factors. However, if we look closely, there seems to be a more fundamental problem behind it.

To find out this, we first need to look at the two concepts of safety that exist within the organization. The first is safety that is directly related to the survival and growth of the organization, and the second is safety as an ideal and universal value for realizing human dignity.

The first safety is directly related to the survival and growth of the organization, so if this safety is not secured, other values have no meaning. This safety is related to major accidents, such as the explosion of the facility or serious injury of the member. Therefore, from the standpoint of the organizational culture, this is actually considered the most important safety right now, and this safety naturally establishes itself as the organizational culture. Furthermore, members naturally perceive and accept this safety, which in turn affects the attitudes and behaviors of the members.

And the second safety is the safety that organizations generally say is the most important, and organizations aim for and want to achieve this safety. And this safety means the level at which no one in the organization is injured. However, since this safety is not directly related to the survival and growth of the organization, it does not naturally establish itself as the organizational culture and is considered the ideal and universal value, not the most important safety right now from the standpoint of the organizational culture.

In this study, the first safety will be expressed as *perceived safety*, and the second safety will be expressed an *ideal safety*.

As mentioned above, *perceived safety* and *ideal safety* have fundamentally different characteristics. The organization aims for *ideal safety*, but the organizational culture considers *perceived safety* the most important safety right now. Therefore, although organizations make various efforts to achieve *ideal safety*, saying safety is the most important, once the level of safety reaches the level that satisfies *perceived safety*, safety beyond that is no longer considered the most important safety for the organizational culture. From then on, safety is still important, but it is considered a value that can be compromising with other values related to the survival and growth of the organization right now. As a result, organizations eventually fail to reach the level of *ideal safety* and stay near the level of *perceived safety*.

In other words, the organization aims to achieve "no injury", but in reality, the organizational culture naturally accepts the level of *perceived safety* and allows some accidents that are not directly related to the survival and growth of the organization, so such accidents continue to occur, and the goal remains an unachievable task.

Here, we may say that it makes no sense that the organizational culture allows some accidents of members. However, when compared to the individual, safety is also the most important for the individual, but this safety is safety that is directly related to the daily life of the individual. Therefore, small injuries that may occur while performing activities directly related to survival in daily life are accepted and such level of safety is regarded as the acceptable level because they do not directly affect the survival in daily life of the individual.

And also, the state that the organizational culture allows some such accidents does not appear explicitly anywhere, but just implicitly appears in members' work attitudes and behaviors

and members perceive such a state as natural and rather accept it as safe enough. This is *perceived safety* and naturally accepted from the organizational culture.

Based on this point of view, this research aims to examine the problems of the safety culture, which has recently attracted a lot of attention, and to examine how to approach safety within the organization in order to reach the level of safety that organizations want to achieve.

2. INTRODUCTION

To this end, we first need to look at what efforts have been made to improve the level of safety of organizations and what has aroused interest in the safety culture.

Among the various efforts, the first is safety-related laws and regulations implemented by the government. These laws and regulations are compulsory by the government and intend to prevent organizations from blindly pursuing profits ignoring the safety of workers, and force organizations to secure a certain level of safety. Looking at the representative safety-related laws, as cited in Li & Guldenmund (2018), there are the Occupational Safety and Health Act (OSH Act) in the US and the Health and Safety at Work etc. Act (HSWA) in the UK.

And also, organizations are regulated by safety-related regulations such as Process Safety Management (PSM) and Material Safety Data Sheet (MSDS). These laws and regulations continue to be strengthened, for example in South Korea, the Serious Accidents Punishment Act takes effect in 2022, which significantly strengthens the top management's responsibility for the accident in the organization.

Next is the establishment of the safety management system in the organization. In addition to the requirements of the laws and regulations, organizations needed a management system to systematically manage safety on their own. Due to these needs, various standards for the safety management system have been developed and the purpose of the safety management system is a systematization of safety-related structures, procedures, and processes for the safety management. The safety management system, as cited in Li & Guldenmund (2018), is generally defined as, "the management procedures, elements and activities that aim to improve the safety performance of and within an organization".

The safety management system is not compulsory like the laws and regulations, but organizations are voluntarily building the safety management system to systematically manage safety, and if the organization meets the specific requirements for the safety management system, they can be officially certified by a certification agency. And recently, there is a growing demand for such certification for the safety management system. A representative standard for the safety management system is BS OHSAS 18001 and OHSMS. And, recently, the international standard, ISO 45001, was established in 2018 due to the growing importance of the safety management system.

And also, various scientific methodologies are being developed to scientifically analyze the accident and manage risk. Representative methodologies are Fault Tree Analysis (FTA), Event Tree Analysis (ETA), Bow-tie Analysis, and Hazard and Operability Study (HAZOP). In addition, recently, various studies are also being conducted on human error and socio-technical aspects, reflecting the increasingly complex environment.

These various efforts have improved the level of safety of organizations, but it can be seen that when the level of safety of the organization reaches a certain level, accidents no longer decrease and increase or decrease are repeated. This phenomenon means that the existing approach has reached its limit to improve the level of safety. Reason (2000) described this phenomenon as, "a general pattern in organizational response to a safety management program is that negative outcome data decline rapidly at first and then gradually bottom out to some asymptotic value."

Looking at the approach so far, the level of safety has been improved mainly by top-down management approaches, such as laws and regulations by the government, the safety management system by the organization and scientific methodologies by the safety department.

Therefore, it seems that the improvement of the level of safety by the top-down management approach reaches its limit. In a similar sense, Cox & Cox (1991) described, as cited in Parker (2006), "plateau is often reached after requirements for safety 'hardware and software' have been met." The hardware and software referred to here can be said to mean such as safety facilities, safety personnel, and safety management system.

Top-down management approaches are essential to efficiently improve the level of safety to a certain level in the early days when there was no foundation for safety management. Therefore, many organizations have relied on top-down management approaches to improve their level of safety and top-down management approaches have played a key role.

However, in the top-down management approach, members view safety as an object that should follow passively to avoid punishment and sanctions, rather than as an object that should voluntarily practice. Geller (1994) described it as, "top-down control motivates employees to avoid failure (i.e., an OSHA citation) rather than achieves success (i.e., an injury-free workplace)." Therefore, if the intensity of safety management is strong, members pay a lot of attention to safety, but if the intensity of safety management is weak, members do not pay much attention to safety. Eventually, accidents continue to increase or decrease at a certain level where the intensity of safety management is maintained.

Organizations are making great efforts to get out of the plateau state and move to a higher level of safety, but they are not easily out of that level. As a result, organizations eventually recognize that voluntary safety practice by members is more important than passive safety implemented by top-down approaches to move toward the higher level of safety. Lee (1998) also emphasized the importance of voluntary safety as "the only way to continue the improvement is to address the hearts and minds of the management and workers."

In the end, the importance of such voluntary safety practice by members has recently aroused interest in the safety culture, and organizations are making great efforts to improve the safety culture due to their desire to get out of the plateau and move toward the higher level of safety. In this regard, Reason (2000) described that the safety culture has a profound significance when the accident rate reaches the plateau, and Cox & Flin (1998) also described that the desire to move off the plateau fueled the safety culture.

3. LITERATURE REVIEW ON SAFETY CULTURE

As mentioned above, the safety culture has recently attracted a lot of attention as the solution that can further improve the level of safety of organizations, and many organizations are making various efforts. However, we may question whether such interest and efforts in the safety culture actually improve the level of safety and guide organizations correctly toward their goal.

Guldenmund (2000) described that there are few studies on the relationship between safety culture and safety performance, so actual effect is uncertain, and Cole et al. (2013) also explained that many researchers express the ambiguity of the safety culture. For example, Cox & Cox (1996), as cited in Cox & Flin (1998), described the safety culture as, “catch-all for social psychological and human factor issues” and Clarke (2000) described the safety culture as, “the concept remains vague, lacks empirical validation and is used as an ‘umbrella term’ for all the social and organizational factors that affect accident rate”.

As such, although the safety culture is important, it is not clear whether it actually contributes to improve the level of safety to the goal, and the concept itself is somewhat declarative and can be felt to be without substance. Moreover, many organizations don’t know the specific way to substantially improve the safety culture, and we can see that many organizations are still suffering from continuous accidents. Therefore, it can be thought that people are putting up a plausible shield on a problem that is difficult to solve and glossing over all excuses with it. Similarly, Guldenmund (2010) described, “safety culture has become a term used by people all around the globe to explain everything relating to safety failures that cannot be explained in another way”. Therefore, it is necessary to look at the problem of why the concept of safety culture does not work properly and find practical solutions to improve the level of safety.

3.1 Unclear Distinction with Other Safety-Concepts in Actual Application

The first problem with the safety culture is that the original purpose of cultural improvement is becoming ambiguous due to unclear distinction with other safety-concepts within the organization when actually applied. Other safety-concepts are the safety climate and safety management system and we need to look at each concept to find out what is ambiguous.

First, the safety culture, as cited in Choudhry et al. (2007), seems to have first appeared in the initial report by the International Nuclear Safety Advisory Group (INSAG, 1986), an advisory group to the International Atomic Energy Agency (IAEA), on the 1986 Chernobyl nuclear accident. Since then, the safety culture has attracted attention and its importance has been discussed in various major accidents such as the 1988 Piper Alpha oil platform explosion (Paté-Cornell, 1993) and the 2003 Columbia accident (Hopkins, 2006). INSAG (1991) defined the safety culture as, "assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance". And many researchers and institutes also made various definitions of the safety culture, which are summarized in Table 1, as mainly described in Cole et al. (2013).

From the definitions of the safety culture in Table 1, it can be seen that the safety culture is related to beliefs, values, and attitudes about safety, and also it can be said from terms such as shared values, norms and attitudes that the safety culture is about *perceived safety* mentioned above. As the safety culture uses the term culture, Cooper (2000) described the safety culture as "a sub-facet of the organizational culture, which is thought to affect members' attitudes and behavior in relation to an organization's ongoing health and safety performance". And Wiegmann et al. (2004) suggested the common components of the safety culture as organizational commitment, management involvement, employee empowerment, reward systems and reporting systems.

Table 1. Definitions of the Safety Culture

Reference	Definitions of the Safety Culture
Uttal (1983)	Shared values and beliefs that interact with an organization's structures and control systems to produce behavioral norms
Cox & Cox (1991)	Safety cultures reflect the attitudes, beliefs, perceptions, and values that employees share in relation to safety
Pidgeon (1991)	The set of beliefs, norms, attitudes, roles, and social and technical practices that are concerned with minimizing the exposure of employees, managers, customers and members of the public to conditions considered dangerous or injurious
Ostrom et al. (1993)	The concept that the organization's beliefs and attitudes, manifested in actions, policies, and procedures, affect its safety performance
UK HSC (1993)	The product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, and organization's health and safety management
Guldenmund (2000)	Those aspects of the organizational culture which will impact on attitudes and behavior related to increasing or decreasing risk
Fang et al. (2006)	A set of prevailing indicators, beliefs, and values that the organization owns in safety
US NRC (2011)	Nuclear safety culture is the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment

Table 2. Definitions of the Safety Climate

Reference	Definitions of the Safety Climate
Zohar (1980)	Safety climate reflects employees' perceptions about the relative importance of safety conduct in their occupational behavior.
Cooper & Philips (1994)	Safety climate is concerned with the shared perceptions and beliefs that workers hold regarding safety in their work place
Hofmann & Stezer (1996)	Safety climate is operationalized as perceptions regarding management's commitment to safety and worker involvement in safety related activities
Cabrera et al. (1997)	The shared perceptions of organizational members about their work environment and, more precisely, about their organizational safety policies
Cheyne et al. (1998)	Safety climate can be viewed as a temporal state measure of culture, which is reflected in the shared perceptions of the organization at a discrete point in time
Flin et al. (1998)	Safety climate refers to the perceived state of safety of a particular place at a particular time. It is therefore relatively unstable and subject to change depending on features of the operating environment
Flin et al. (2000)	Safety climate is defined as a "snapshot" of employees' perceptions of the current environment or prevailing conditions that impact on safety
Yule et al. (2001)	Safety climate is defined as the product of employee perception and attitudes about the current state of safety initiatives as their place of work

And next, the safety climate, as cited in Cox & Flin (1998), seems to have begun to attract attention after research by Zohar (1980). Zohar (1980) described the safety climate as "a summary of molar perceptions that employees share about their work environment". Since then, many researchers have studied the safety climate, and diverse definitions of the safety climate are summarized in Table 2, as mainly described in Guldenmund (2000) and Wiegmann et al. (2004).

From the diverse definitions of the safety climate in Table 2, it can be seen that the safety climate is related to perceptions of safety in the organization. It can be said that the safety climate is what members naturally perceive as safety in their daily lives from the safety culture. Wiegmann et al. (2004) explained that although there is no clear agreement on the definition of the safety climate, but many definitions have the commonalities: perceptions of the state of safety at a particular time; being concerned with intangible issues such as situational and environmental factors; the temporal phenomenon, a "snapshot" of the safety culture, relatively unstable and subject to change. And Zohar (2010) suggested the attributes for the construct of the safety climate: relative priorities; alignment between espousals and enactments; internal consistency; and shared cognitions or social consensus.

Lastly, looking at the safety management system, as mentioned in the previous chapter, the safety management system refers to the systematization of safety-related structures, procedures, and processes to systematically manage the safety in the organization. And unlike safety culture and safety climate, safety management approaches safety from the systematic and management aspect, not the human aspect.

The safety management system has been internationally standardized as ISO 45001:2018 in 2018. And from the requirements of ISO 45001:2018 shown in Table 3, we can see that the safety management system systematically approaches the overall essentials for safety management

within the organization, such as leadership and worker participation, planning, support, operation, performance evaluation, and improvement, based on the Plan-Do-Check-Action cycle.

Table 3. Requirements of ISO 45001:2018

	Requirements
Leadership and worker participation	Leadership and commitment OH&S policy Organizational roles, responsibilities and authorities Consultation and participation of workers
Planning	Actions to address risks and opportunities OH&S objectives and planning to achieve them
Support	Resources Competence Awareness Communication Documented information
Operation	Operational planning and control Emergency preparedness and response
Performance evaluation	Monitoring, measurement, analysis and performance evaluation Internal audit Management review
Improvement	General Incident, nonconformity and corrective action Continual improvement

From the above explanation of each concept, as shown in Figure 1, it can be seen that the safety culture is the concept dealt with on the human aspect as part of the organizational culture, and the safety climate is also the concept dealt with on the human aspect, but it is related to the perception of members, which exists superficially. On the other hand, the safety management system is the concept dealt with on the systematic aspect, which is different from safety culture and safety climate.

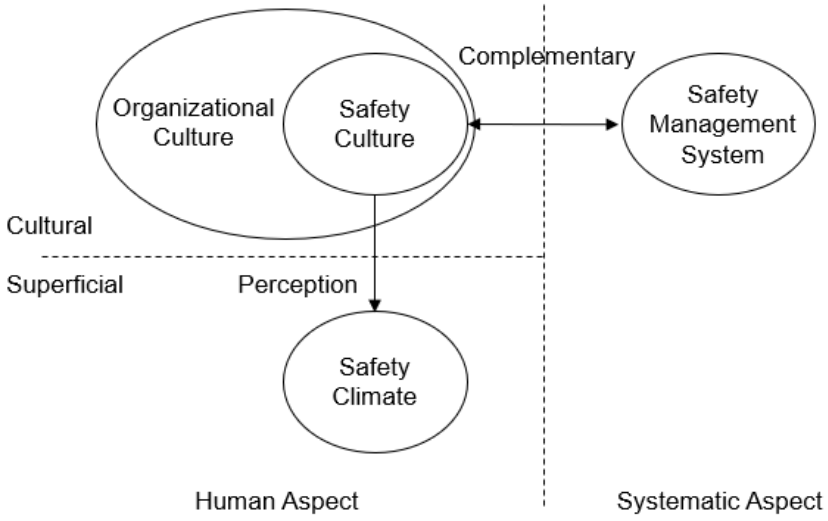

Figure 1. Original Purpose of Safety-Concepts

As such, each concept has its own purpose and meaning. However, when applied in practice, its own purposes are often blurred and unclear. Especially in the case of the safety culture, due to the characteristic of the culture that is difficult to measure and change, the distinction from other safety-concepts is more unclear when actually applied.

First, looking at the unclear distinction between safety culture and safety climate, as shown in Figure 2 (a), originally, the safety culture deals with the human aspect deeply embedded within the organization and the safety climate deals with the outward perception of safety.

Flin et al. (2000) described this difference, as cited in Cole et al. (2013), as "whereas safety culture represents long-term attitudes, beliefs and the stable ways in which people behave, the safety climate represents a snapshot of the current state of these factors at any one time."

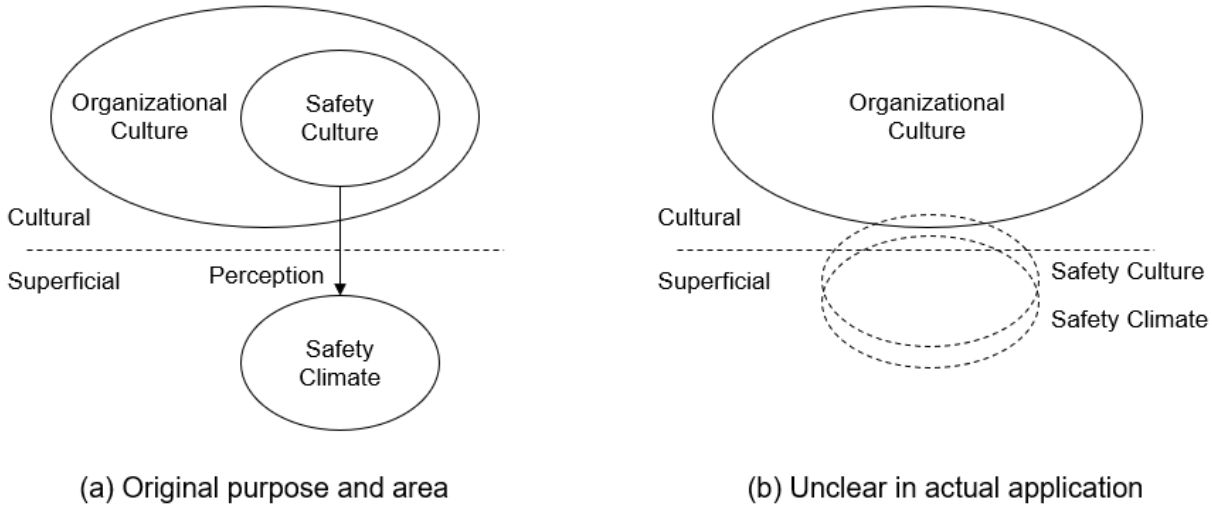

Figure 2. Safety Culture vs Safety Climate

However, both safety culture and safety climate deal with the human aspect, and there is only a difference in depth whether it is embedded inside or exposed outward. Actually, the safety climate appears as a result of the safety culture, and the cause of the safety climate is the safety culture. In order to understand the safety culture, the safety climate must be investigated, and in order to change the safety climate, the safety culture must be changed.

Therefore, they are applied almost similarly in practical application. Cox & Flin (1998) described this similarity that they are often used interchangeably, and Wiegmann et al. (2004) described that some definitions have little difference between safety culture and safety climate. Guldenmund (2000) also described that the concept and relationship are not clear, so the concepts do not work well.

Because of this similarity, the safety culture is often replaced by the safety climate. Therefore, as shown in Figure 2 (b), organizations utilize the concept of safety culture to improve their fundamental culture, but in the end, only superficial improvements are often made, and the original purpose of cultural improvement itself is weakening.

Next, looking at the unclear distinction between safety culture and safety management system, as shown in Figure 3 (a), originally, the safety culture approaches safety from the human aspect and the safety management system approaches safety from the systematic aspect.

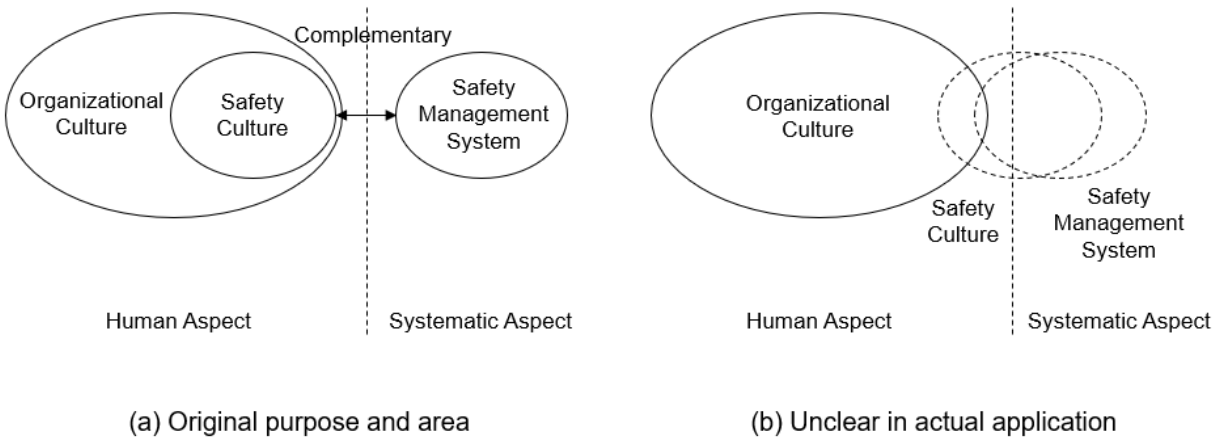

Figure 3. Safety Culture vs Safety Management System

Two concepts have different purposes, but when applied in practice, as shown in Figure 3 (b), they deal with similar components overlapping each other. Cox & Flin (1998) described that the indicators for the safety culture contain conceivable indicators of the safety management system from the INSAG report on safety culture (IAEA 1991) and the ACSNI Human Factors Study Group report (HSC 1993).

The reason why that phenomenon occurs is because the safety culture can be measured based on how well the safety management system works such as manuals, communication, and training, and the safety management system should also deal with structures, procedures, and processes related to leadership and member participation, which are key elements of the safety culture. Therefore, both safety culture and safety management system come to include the same components comprehensively.

And it is natural that the safety culture and safety management system should be complementary to each other. The safety management system works effectively based on the excellent safety culture, and the safety culture can be improved based on the systematic safety management system. Guldenmund (2010) also described that since the safety management system should be warranted for the safety culture, so the safety culture maturity can be replaced by the safety management system development. Therefore, it is natural that they should be approached together.

However, the problem to be noted here is that the original purpose of the safety culture of improving the deep cultural aspect is weakening, and since the cultural aspect is difficult to manage, measure, and change, organizations mainly focus on the evaluation and improvement of the systematic aspect. Therefore, there is only superficial improvement being made rather than fundamental cultural improvement. Regarding this problem, Cox & Flin (1998) described that the

dimensions of safety culture are often focused on parts which are relatively easy to measure rather than parts that should be measured, so they have the limitation to change aspects of the safety culture.

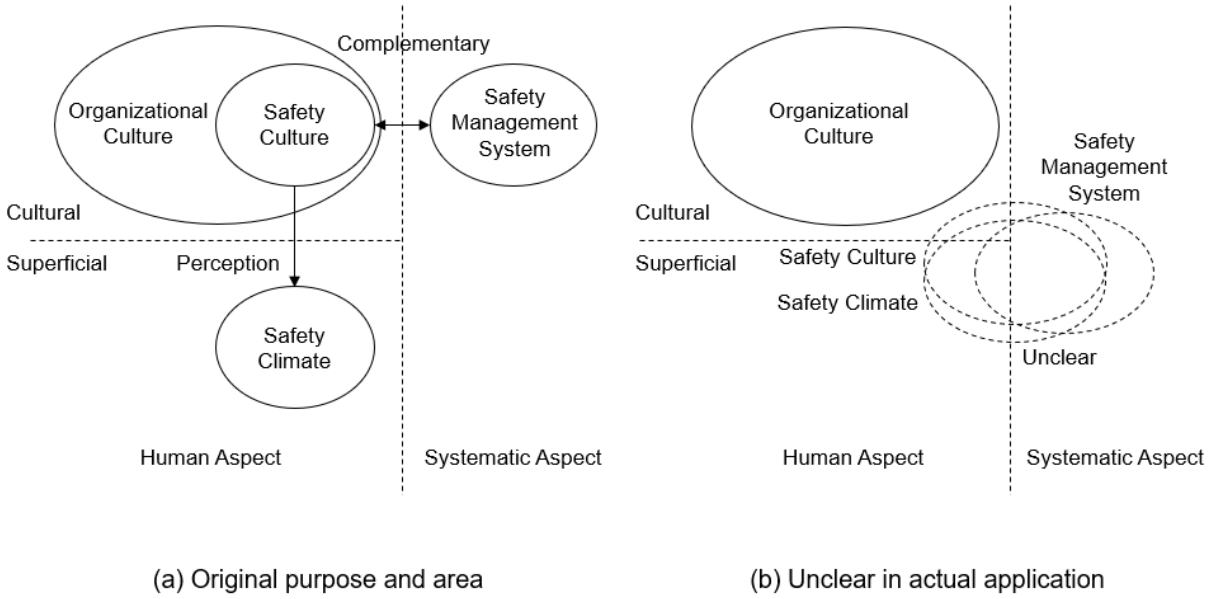

Figure 4. Unclear Distinction with Other Safety-Concepts

Therefore, as shown in Figure 4, the safety culture is being applied unclearly from other safety-concepts when actually applied, and its original purpose is becoming ambiguous and weakened. And thus, the improvement of the safety culture is made of superficial activities rather than cultural improvement.

3.2 Difference Nature between Organizational Culture and Ideal Safety

Next, we will look at whether the approach by the safety culture is fundamentally effective to achieve the level of safety that organizations aim for.

As discussed earlier, the goal that organizations aim to achieve is to move beyond the plateau in which accidents continue to occur and ultimately move toward “no injury”, which is related to *ideal safety* mentioned above. And the desire to realize the safety organization in which no one is injured has encouraged interest in the safety culture.

However, as Cooper (2000) mentioned above, considering that the safety culture is the sub-facet of the organizational culture, it can be seen that the safety culture works within the scope of the organizational culture and cannot escape from the organizational culture. Therefore, it is necessary to first find out what the organizational culture is, and representatively, Schein (2004) defined the organizational culture as follows:

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

And he described that external adaptation in his definition is related to “survival, growth, and adaptation in their environment” and internal integration in his definition is related to “daily functioning and the ability to adapt and learn”, and he also emphasized the following characteristics of the organizational culture: structural stability; depth; breadth; and patterning or integration. Through this, it can be seen that the organizational culture is the concept that is patterned and stable inside the organization while solving problems related to the survival and growth of the organization.

Therefore, considering that the safety culture approaches improving the level of safety as the sub-facet of the organizational culture, it may be questionable whether this approach can enable organizations to achieve *ideal safety* they want. In the end, it can be judged that if *ideal safety* has the attribute of establishing itself as the sub-facet of the organizational culture, *ideal safety* can be achieved through the improvement of the safety culture. To this end, it is necessary to examine the nature of the organizational culture and *ideal safety* and the relationship between each other.

First, the organization must make profit to survive and grow. Therefore, the organizational culture is task-oriented and basically related to characteristics such as high efficiency and productivity, which requires low cost, fast work speed, and more output. And members feel convenient and comfortable in the way according to the organizational culture. And also, the organizational culture also tries to maximize performance through competition among members. Overall, the organizational culture aims for commercial success and values financial characteristics.

On the other hand, *ideal safety*, which organizations aim for, is related to universal and social value and it is a matter of human dignity. Fundamentally higher level of safety requires more time and cost. And *ideal safety* prefers to follow the work standards perfectly and work according to the rules even if it is inconvenient and uncomfortable, and *ideal safety* pursues a stable and harmonious state rather than a tense state by competition. Overall, *ideal safety* can be seen as more of a characteristic as an ideal and universal value that should be pursued ideally rather than a commercial success and financial characteristic.

As such, it can be seen that organizational culture and *ideal safety* have fundamentally different nature and are rather facing the opposite direction. Therefore, it can be said that they have

the characteristics of making compromises with each other rather than a concept that improves together.

From the standpoint of the organizational culture, *ideal safety* is perceived as uncomfortable and inefficient, and is rather rejected in terms of organizational survival and growth, and thus *ideal safety* does not become the sub-facet of the organizational culture. For example, *ideal safety* pursues strict adherence to work standards when working, even though it is time-consuming and uncomfortable. However, the actual organizational culture always finds more efficient methods, and if that method works well and secures a certain level of safety, it will eventually become a new organizational culture.

Here, it may be thought that it makes no sense for the organization to simply aim for profit, however, looking at the environment in which organizations are actually placed, the survival is threatened immediately if profit is not guaranteed. Rasmussen (1997) also described that the environment in which organizations live is very aggressive and competitive, so decision makers should focus on "short term financial and survival criteria" rather than "long term criteria concerning welfare, safety, and environmental impact".

As such, *ideal safety* has different natures from the organizational culture, so it cannot be regarded as the sub-facet of the organizational culture. Therefore, it can be seen that the approach through the safety culture that acts as the sub-facet of the organizational culture and is thereby affected by the survival and growth of the organization is not the proper way to achieve *ideal safety*.

In the end, as shown in Figure 5 (a), approaching the concept of safety culture to improve the level of safety of the organization works within the scope of the organizational culture, which has a limitation of reaching only the level of safety within the scope of the organizational culture.

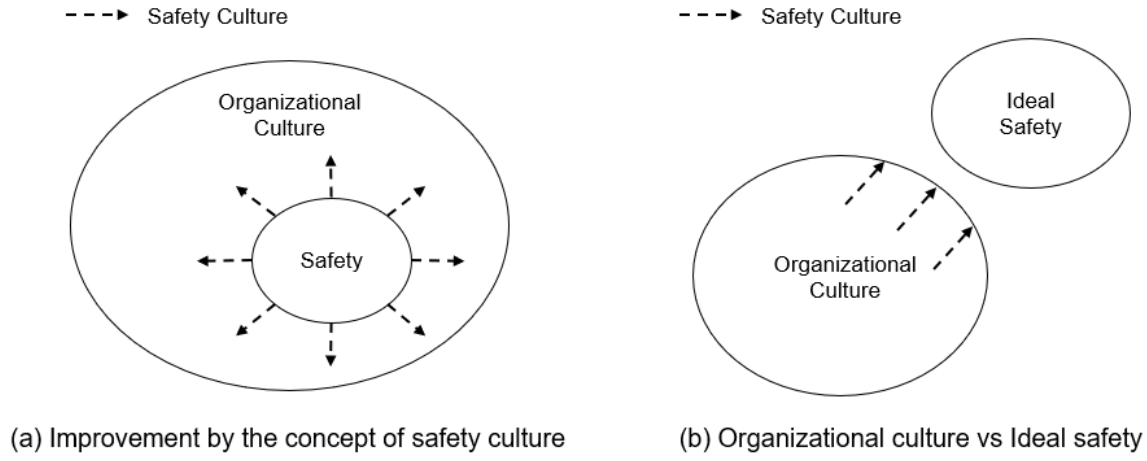

Figure 5. Organizational Culture vs Ideal Safety

As previously confirmed, the organizational culture considers safety beyond *perceived safety* as the safety that can be compromising, allowing accidents that are not directly related to the survival and growth of the organization to continue to occur, making it impossible to reach *ideal safety* and maintaining the level of safety at *perceived safety*.

Interest in the safety culture itself was begun to overcome this level of safety, however, as shown in Figure 5 (b), it can be seen that the safety culture has fundamental limitation in overcoming this level and leading to *ideal safety*, because organizational culture and *ideal safety* have fundamentally different nature and the safety culture should be bound by the organizational culture. As a result, many organizations are making great efforts to improve safety culture, but they are not exerting practical effects, and we could feel that the concept of safety culture itself is somewhat ineffective and declarative.

3.3 Difficulty in Changing Organizational Culture for Safety-First Culture

It has been confirmed that since the safety culture is bound by the organizational culture, it is not the proper approach to lead the level of safety of the organization to *ideal safety* which has a different nature from the organizational culture.

Then, we may ask that if we can change the organizational culture itself to the level that puts safety first through the concept of safety culture, the approach by the safety culture is effective and organizations can achieve their goal. Here, the organizational culture that puts safety first is the concept that improves *perceived safety*, which is one of the sub-facets of the organizational culture, to a high level.

To examine this, looking at *perceived safety* again, *perceived safety* is the safety that is directly related to the survival and growth of the organization and naturally has become the cultural aspect of the organization. *Perceived safety* can be improved through the improvement of safety culture. However, we need to look at whether we can build the organizational culture as the culture that puts safety first and improve the level of safety to the level organizations want to achieve through the safety culture.

To this end, we need to take a closer look at the characteristics of the organizational culture. The organizational culture is the most optimal way the organization has survived for a long time. Therefore, the various sub-facets such as production, quality, and safety are balanced in the most optimal state for the survival and growth of the organization. And also, sub-facets are complexly intertwined within the organizational culture and each organizational culture has its own meaning and advantage in the given environment and resource based on the organization's history and experiences so far. And safety is also established as *perceived safety*, which is the optimal state for the survival and growth of the organization.

The organizational culture is balanced in the way that various sub-facets compromise with each other for the survival and growth of the organization, and each sub-facet is not reflected as a top priority. In other words, if one sub-facet is intensively emphasized or enlarged, the balance for the survival of the organization is broken, and this imbalance can threaten the survival of the organization and the organizational culture instinctively rejects it.

Schein (2004) described that disorder or imbalance, which challenge the organizational culture, release anxiety and defensiveness, and the organizational culture works as a psychological cognitive defense mechanism. Therefore, the organizational culture inevitably has great resistance to the imbalance caused by the intensive emphasis of any of the sub-facets of the organizational culture to reduce anxiety. Guldenmund (2000) also described the characteristics of the organizational culture as, "a relatively stable, multidimensional, holistic construct shared by members". And Mearns & Flin (1999), as cited in Wiegmann et al. (2004), described the organizational culture as, "deeply rooted in history, collectively held, and sufficiently complex to resist any attempts at direct manipulation".

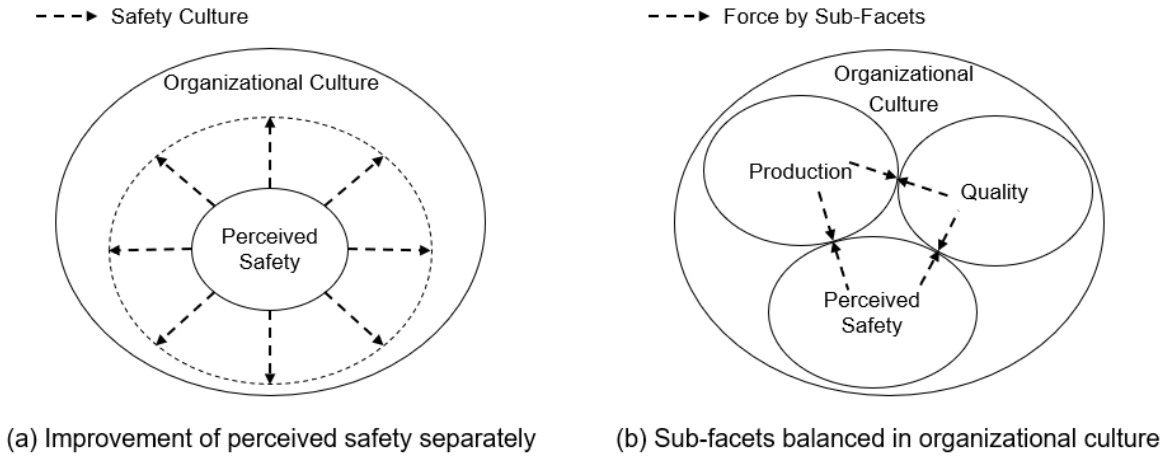

Figure 6. Various Sub-Facets Balanced for the Survival of the Organization

If only *perceived safety* is discussed separately within the organizational culture, as shown in Figure 6 (a), the level of safety can be improved as much as the organization wants, but as seen above, due to the characteristic of the organizational culture in which various sub-facets are balanced, *perceived safety*, as shown in Figure 6 (b), is not a concept that can be improved separately within the organizational culture.

Until now, the approach by the safety culture has seemed to be effective to improve to the level that organizations aim to because it has approached *perceived safety* separately. This improvement is possible if management and employees are only dedicated to safety and invest enough money.

However, in reality, if only *perceived safety* is emphasized to establish the safety-first culture, the balance of the existing organizational culture will be broken, thus the organizational culture strongly resists this imbalance that can threaten the survival of the organization.

Wiegmann et al. (2004) described the organizational culture as, “an emergent property of the organization by its unique history and individual members and more than the sum of its parts” and he emphasized that the organizational culture cannot be understood by its individual components. Therefore, *perceived safety* cannot be approached separately within the organizational culture.

As such, it is difficult to change the organizational culture itself only for *perceived safety* and it must go through the complex process to suit other sub-facets, so it is formed through the natural selective and gradual process rather than the intentional improvement. Therefore, although many organizations are promoting the safety-first culture, if we look closely, it is not easily realized because it is a matter of the survival of the organization.

For example, even if the safety department tries to apply the safety improvement program to build the safety-first culture, there are parts that can never be changed from the standpoint of production, quality, and line department, hence it always needs to find the compromise. And other departments can complain that the safety department is always talking about ideal things that are difficult to realize.

As a result, many organizations have tried to change the organizational culture into a safety-first culture through the improvement of safety culture, but it is not working well, and only superficial activities are being carried out due to the characteristics of the organizational culture. Regarding this difficulty in changing the safety culture, Hale et al. (2010), from the results of his research conducted with government subsidies, described that safety culture does not change well even if the government subsidizes organizations to improve the safety culture.

Exceptionally, *perceived safety* may become part of the organizational culture at a high level if the organization experiences accidents and experiences that have a decisive impact on the survival of the organization like DuPont. However, this high level of *perceived safety* is formed only by experiencing major accidents and certain histories, however, most organizations don't have such experiences or there is no need to intentionally experience such accidents to improve the level of safety.

And what we need to be aware of here is not to say that the level of safety cannot be improved through the improvement of safety culture. Of course, it is possible to improve the level of safety to a high level through the improvement of safety culture. However, the organizational culture is the most optimal way learned and deeply embedded to survive through major events and experiences over a long time, so it can only be gradually improved over a long period of time.

Gulenmund (2010) described this gradual change as, “substantial change in the organizational culture takes around 25 years.”

However, once again, the safety culture is not getting attention for organizations to slowly improve the level of safety through this gradual process, which takes 25 years, but to protect members from the accidents that are occurring now and to achieve tangible results. And also, it was due to the aspiration to get out of the plateau state and build the safety-first culture right now.

Therefore, we need to find the practical way to achieve the level of safety that organizations want, not the concept of safety culture that is not properly working right now.

4. SOLUTION FOR VOLUNTARY SAFETY

4.1 Change the Perspective on Safety within the Organization

In the previous chapter, it was confirmed that the concept of safety culture has limitations in leading organizations to the level of safety they aim for and the level of safety that organizations want to achieve is moving toward *ideal safety*.

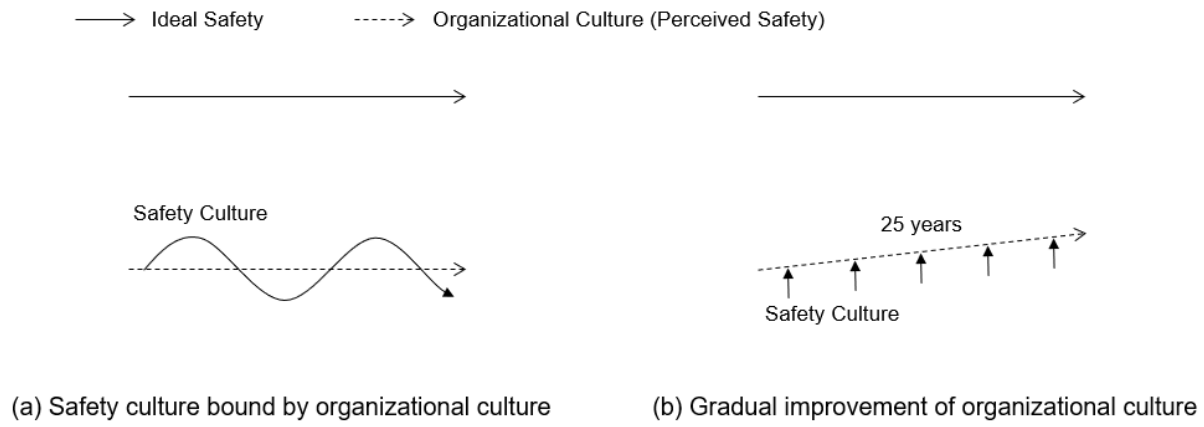

Figure 7. Limitations of the Concept of Safety Culture

Summarizing the limitations, as shown in Figure 7 (a), the concept of safety culture is bound by the organizational culture, so it can be seen that it is driven back by the gravity of the organizational culture, which forms *perceived safety* and it cannot reach to *ideal safety*. And also, as shown in Figure 7 (b), through the concept of safety culture, it can be seen that the organizational culture takes a long time to improve and it does not change well to build the organizational culture itself as the culture that puts safety first. As such, it can be seen that the concept of safety culture is not the proper way to achieve the level of safety that the organization aims for, and in the end, we have to change the perspective on safety within the organization.

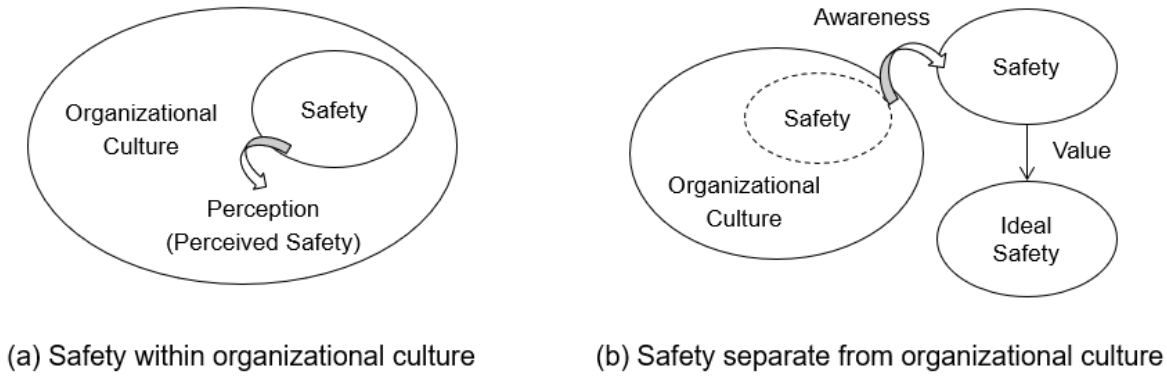

Figure 8. Change the Perspective on Safety

In the concept of safety culture, as shown in Figure 8 (a), safety is regarded as the sub-facet of the organizational culture, so the improvement of safety is dealt with in the area of the organizational culture and members passively perceive safety as *perceived safety* related to the survival and growth of the organization. And the level above *perceived safety* is not directly related to the survival and growth of the organization, so it is considered the compromising safety, not the most important safety.

However, in order to achieve *ideal safety*, which organizations wants, as shown in Figure 8 (b), safety must be dealt with in the area separate from the area of the organizational culture, and members must voluntarily be aware of *ideal safety* based on an ideal and universal value, which is different from the survival and growth of the organization, and conduct intentional efforts.

Compared to the individual, the organization's pursuit of *ideal safety* in the area separate from the organizational culture can be seen as the individual's pursuit of spiritual belief and value separately from the personality of the individual.

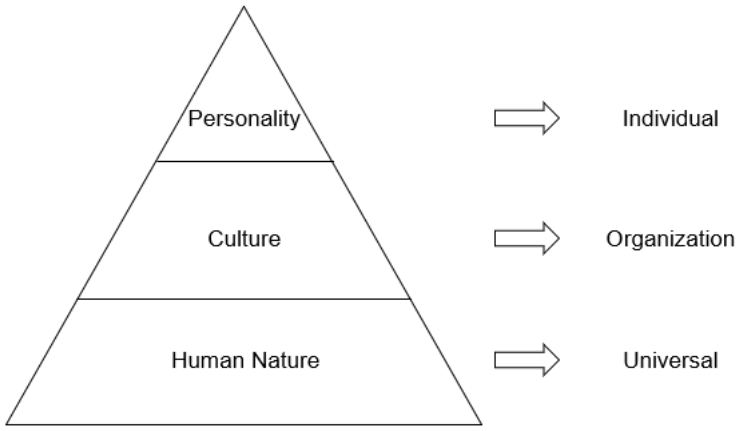

Figure 9. Hofstede et al. (2010) Mental Programming

Hofstede et al. (2010), as shown in Figure 9, defined the organizational culture as "mental programming" like the personality of the individual, and he called it "software of the mind". Based on this, it can be seen that the organizational culture, which is programmed in relation to the survival and growth of the organization, has similar characteristics to the personality of the individual, which is programmed in relation to the survival and growth of the individual. Therefore, personality and organizational culture can be treated from a similar perspective and they are very difficult to change because they are related to the survival and growth of the individual and organization.

And for the individual, there is a spiritual belief and value, which is pursued separately from the personality. Although the personality of the individual is very difficult to change once it is formed, spiritual belief and value can be acquired and changed by intentional efforts. The personality of the individual is related to worldly and selfish characteristics such as success, money, power, and reputation for survival in daily life. However, the spiritual belief and value of the

individual is for the spiritual fulfillment, not the survival in daily life. In other words, it is for survival in the spiritual aspect, and it is usually conducted by religion. Ellwood (1913) described religion as, “belief in the reality of spiritual life” and “a mental attitude which finds the essential value”. And the spiritual belief and value of the individual is related to noble and altruistic characteristics such as love, mercy and humility, which is conducted by most religions.

It has been confirmed in the previous chapter that *ideal safety* has the different characteristics from the organizational culture. And we can say that the ideal and universal value such as *ideal safety* that the organization should pursue separately from the organizational culture is similar to the spiritual belief and value of the individual that the individual should pursue separately from the personality. Therefore, we can say that *ideal safety* is for survival in the spiritual aspect of the organization, similar to survival in the spiritual aspect of the individual.

And also, it is eventually related to the integrity of the organization. Clark & Fujimoto (1990) described integrity as, “wholeness, completeness, soundness” from the dictionary meaning. And Huberts (2018) also described integrity as, “wholeness and coherence, professional responsibility, moral reflection, values like incorruptibility, laws and rules, moral values and norms, exemplary behavior”.

The spiritual belief and value of the individual have different characteristics from the personality of the individual, so the spiritual belief and value of the individual is pursued by intentional efforts like religious activities separate from daily life. If spiritual belief and value had been a part that could be sufficiently pursued in the area of personality, the area of religion would not have been formed as such an important area, and the spiritual belief and value would have naturally been formed as the personality of the individual in daily life.

However, rather, the spiritual belief and value have characteristics that must compromise with the personality of the individual, so the spiritual belief and value is the concept that is not naturally formed in daily life unless the separate intentional efforts are made. This is because daily life is a series of parts related to the survival of worldly and selfish daily life every day, thus the spiritual belief and value is easily ignored and missed in daily life unless it is intentionally aware and valued separately. Therefore, the area of religion has established a separate system, and through religion, individuals are making intentional efforts for the survival in the spiritual aspect separately from the area of personality related to the survival in daily life.

Just as the spiritual belief and value of the individual should be pursued separately in the area different from the personality of the individual, such as religion, *ideal safety* of the organization should also be pursued based on intentional efforts in the area separate from the area of the organizational culture. If *ideal safety* was the concept that could be sufficiently pursued in the area of the organizational culture, this discussion would not have been necessary from the beginning, and it would have naturally formed and improved as the sub-facets of the organizational culture in the area of the organizational culture, and many organizations would have achieved *ideal safety*. However, as we have already seen, accidents are still occurring in organizations and *ideal safety* cannot be achieved in the area of the organizational culture, so it should be dealt with and pursued in the area separate from the organizational culture, such as the spiritual aspect of the individual.

Summarizing these characteristics of individual and organization, as shown in Figure 10, the individual has areas of personality and spiritual belief and value, and the organization has areas of the organizational culture and ideal & universal value. Just as the personality of the individual aims to survive in daily life, the organizational culture aims to survive in daily business. And just

as the spiritual belief and value of the individual aims to the survival in the spiritual aspect of the individual, the ideal and universal value of the organization, such as *ideal safety*, aims to the integrity of the organization, which can be said to be the survival in the spiritual aspect of the organization.

Figure 10. Individual and Organization

The survival in daily life is the most important for the individual, but when it is secured, the survival in the spiritual aspect also acts as a separate important value for healthy and sustainable survival of the individual. And if the survival in the spiritual aspect is not met, the individual suffers from chronic spiritual anxiety and pain, although survival in daily life is possible. This is caused by the spiritual deficiency such as loss of meaning and purpose of life that occur when the individual only focuses on more material value and success in daily life. And this can also destroy the individual's life in a different sense in terms of healthy and sustainable survival.

Similarly, the survival in daily business is the most important for the organization, but when it is secured, the integrity of the organization also acts as a separate important value for

healthy and sustainable survival of the organization. And if this is not met, the organization suffers from various adverse phenomena such as continuous accidents and ethical crimes, although survival in daily business is possible. This is caused by the deficiency of the integrity of organization and spiritual dissatisfaction of members that occur when the organization only focuses on the more material value and success in daily business, and this can also destroy the organization's business in a different sense in terms of healthy and sustainable survival.

The individual's chronic spiritual anxiety and pain is not directly related to the survival in daily life, so the patterned personality for the survival of daily life focuses on more urgent parts for the survival in daily life and continues to cause these spiritual anxiety and pain. Therefore, the individual's spiritual anxiety and pain is not easily solved in the area of the personality and it can eventually be reduced when the survival in the spiritual aspect of the individual is satisfied based on the spiritual belief and value.

As such, the spiritual belief and value give the separate important value to the individual separate from the survival in daily life, so the individual recognizes that it is also worth pursuing and intentionally pursues it through separate spiritual and religious activities from daily life. Therefore, in our real life, individuals of various different personalities are pursuing such spiritual and universal values like love, charity, and humility through religion.

For the organization, *ideal safety* is the concept, which is similar to such spiritual and universal values for the individual. Therefore, in order for organizations to prevent continuous accidents and move to the level of *ideal safety* they want to achieve, organizations must approach and recognize *ideal safety* in the area different from the area of the organizational culture. Based on this, intentional efforts should be made by giving *ideal safety* the separate important value like the integrity of the organization, which is different from survival in daily business.

4.2 Framework for Voluntary Safety toward Ideal Safety

As discussed above, it is difficult to intentionally change the personality of the individual because it is directly related to survival in daily life, but it is possible to form and improve the spiritual belief and value of the individual through spiritual and religious activities.

Based on this concept, we would like to examine how to achieve *ideal safety* of the organization by referring to the role of religion in pursuing the spiritual belief and value of the individual. This does not mean that *ideal safety* is viewed as a religion, but means that the method is established by referring to the role of religion.

Individuals are pursuing survival in the spiritual aspect through religion separate from their daily life based on the spiritual belief and value. We can look at the role of religion for spiritual belief and value for individuals in Figure 11. The lower line represents the aspect of personality and the upper line represents the aspect of spiritual belief and value. And the arrow between two lines represents the flow of an individual's awareness.

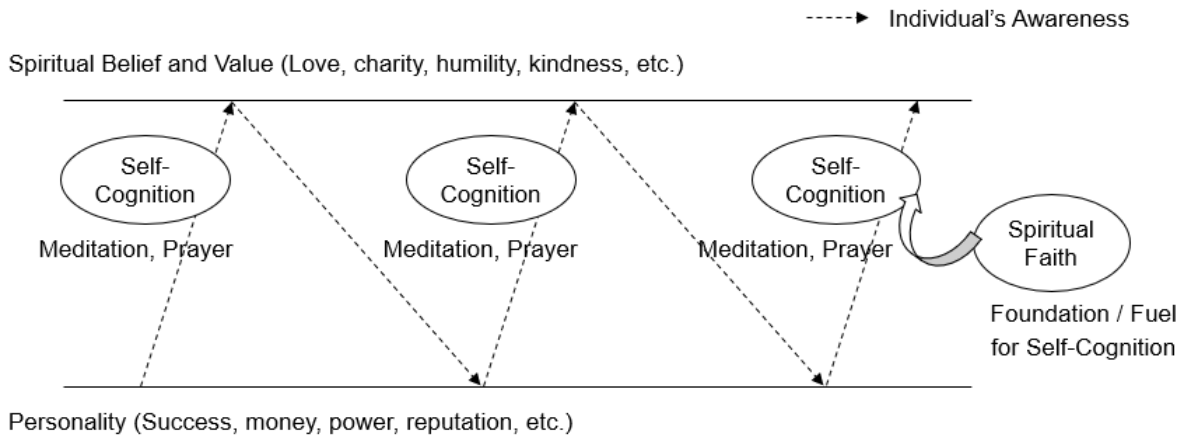

Figure 11. Role of Religion for the Individual

Basically, the individual's daily life is dominated by the personality, but the individual can recognize the spiritual belief and value separately through religious activities and strengthen the awareness about spiritual belief and value through intentional efforts. Because such awareness is always directed back to the survival in daily life in the individual's daily life, intentional efforts are needed, so the individual regularly raises the awareness about spiritual belief and value through self-cognition such as meditation and prayer.

And spiritual faith about spiritual belief and value provides the fundamental foundation and fuel for such self-cognition. This spiritual faith can be formed by the individual's experience about the specific spiritual value or can also be formed by asking questions and finding answers through collective consciousness with others, such as religious community activities.

As such, it can be seen that religious activities for spiritual belief and value are mainly composed of two key components. The first is to intentionally raise awareness of spiritual belief and value based on self-cognition, and the second is the formation of fundamental spiritual faith that enables such self-cognition to be voluntarily practiced.

Therefore, if we apply the role of religion to the organization for *ideal safety*, we can describe it as shown in Figure 12. The lower line represents the aspect of *perceived safety*, which is related to the organizational culture, and the upper line represents the aspect of *ideal safety*. And the arrow between two lines represents the flow of members' awareness.

Similar to the individual, the organization is dominated by the organizational culture, so the organization and members should recognize *ideal safety* separately through self-safety cognition and strengthen the awareness about *ideal safety* through intentional efforts. And the organization and members should periodically raise the awareness about *ideal safety* through self-safety cognition because such awareness is directed back to survival in business.

And also, safety faith about *ideal safety* is needed to provide the foundation and fuel for such self-safety cognition. This safety faith could be formed through collective consciousness and activities at the organizational level.

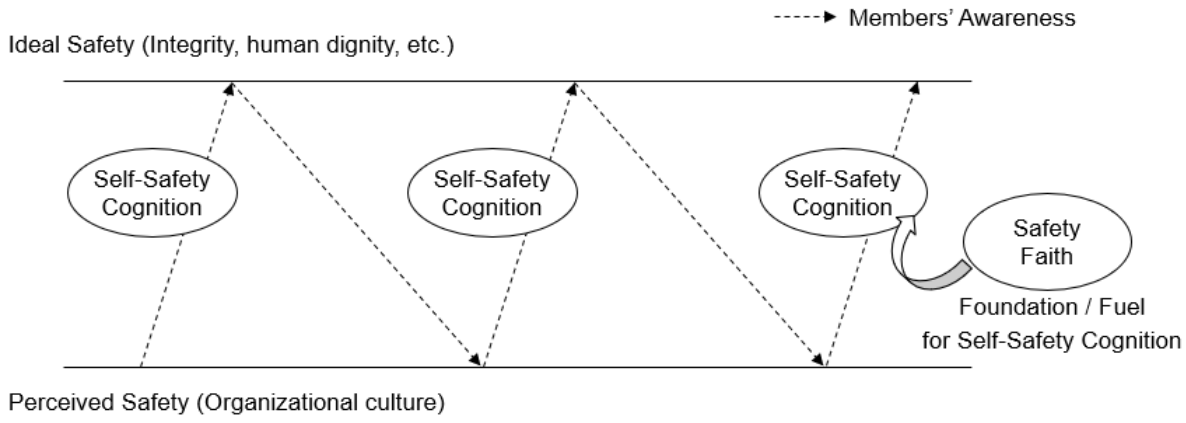

Figure 12. The Concept for Pursuing Ideal Safety in the Organization

Based on this, I would like to propose the basic concept for members to voluntarily practice safety and achieve *ideal safety*. In order to realize *ideal safety* in the organization members should not passively perceive and accept *perceived safety*, but rather should give another important value separate from survival in daily business to *ideal safety* and voluntarily be aware and pursue it by intentional efforts.

Therefore, the concept for *ideal safety* should include two elements as shown in Figure 13, which are members' self-safety cognition at the individual level and safety faith at the organizational level as fundamental foundation for voluntary and steady practice of self-safety cognition.

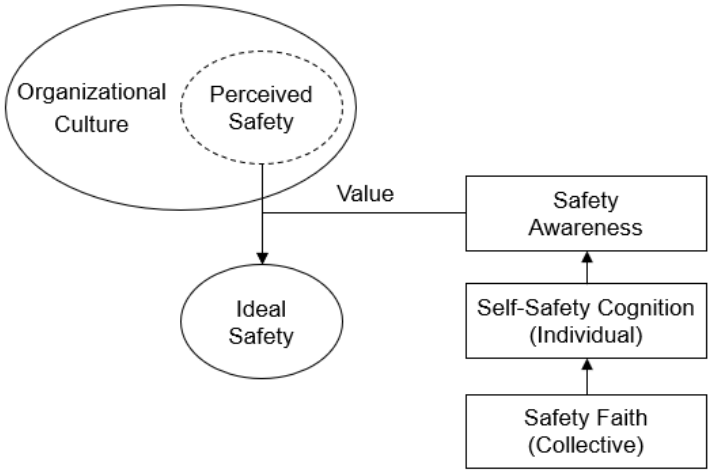

Figure 13. Basic Concept for Voluntary Safety Practice

From this concept, I would introduce a new framework for voluntary safety toward *ideal safety* in the organization as shown in Figure 14.

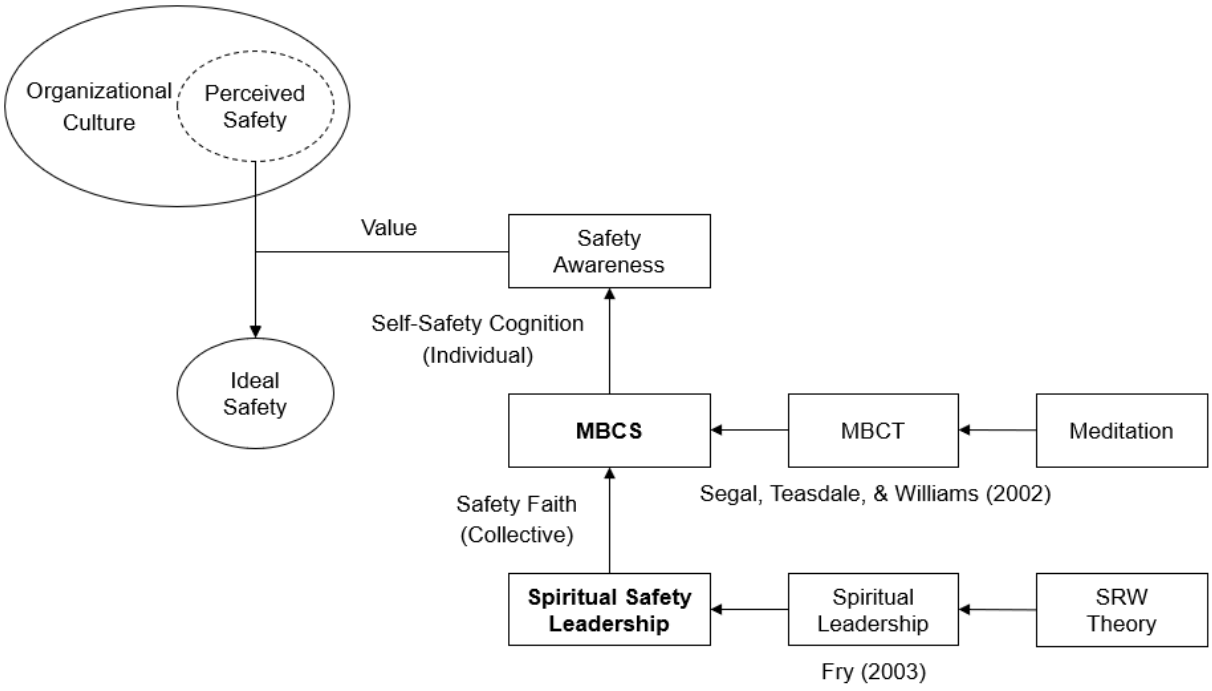

Figure 14. Framework for Voluntary Safety Practice

This framework consists of two concepts, the first is a new concept of Mindfulness-Based Cognitive Safety (MBCS) for self-safety cognition of members at the individual level, and the second is another new concept of spiritual safety leadership for safety faith at the organizational level.

Mindfulness-Based Cognitive Safety (MBCS) refers to Mindfulness-Based Cognitive Therapy (MBCT) which was proposed by Segal et al. (2018) in the field of psychology to prevent relapse of depression, and MBCT is based on the Buddhist traditional meditation that controls the individual's mind.

And spiritual safety leadership refers to spiritual leadership which is proposed by Fry (2003) in the field of leadership. Spiritual leadership is the representative theory of Spirituality and Religion in the Workplace (SRW) Theory.

In the next chapter, I will present MBCS and spiritual safety leadership in more detail, respectively, based on MBCT and spiritual leadership.

4.3 Mindfulness-Based Cognitive Safety (MBCS)

As mentioned above, in order to realize *ideal safety*, members must intentionally recognize the value of *ideal safety* and voluntarily practice safety based on self-safety cognition, not passively perceive *perceived safety* and habitually act on safety as a result of the organizational culture.

In this regard, referring to the role of religion, meditation and prayer play an important role in allowing the individual to intentionally recognize and pursue spiritual belief and value beyond the habitual perception and behavior by the personality in daily life. In particular, meditation is based on mindfulness, and mindfulness allows the individual to maintain moment-by-moment awareness based on self-cognition, not to perceive the world in a habitual pattern by the personality.

The organization can refer to the principle of meditation in order to intentionally recognize and pursue *ideal safety* beyond the habitual *perceived safety* by the organizational culture, so I propose Mindfulness-Based Cognitive Safety (MBCS) for self-safety cognition of members based on mindfulness, a core principle of meditation. And the organization can maintain moment-by-moment safety awareness through MBCS.

In the field of psychology, Segal et al. (2018) established Mindfulness-Based Cognitive Therapy (MBCT) to prevent the relapse of depression of the individual based on mindfulness, and MBCS intends to apply mindfulness to safety by referring to MBCT. Zinn (1994), as cited in Segal et al. (2018), described mindfulness as, “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally”. And Segal et al. (2018) described the depression as, “a disorder of mood that affects a person’s capacity to think clearly; undermines motivation to act; alters intimate bodily functioning, such as sleeping and eating; and leaves a person feeling stranded

in the midst of searing mental pain and suffering he or she feels unable to do anything about". And he also regards depression as "a chronic, recurrent disorder".

Teasdale et al. (2000) described the reason for relapse and recurrence of depression as, "repeated associations between depressed mood and patterns of negative, self-devaluative, hopeless thinking during episodes of major depression".

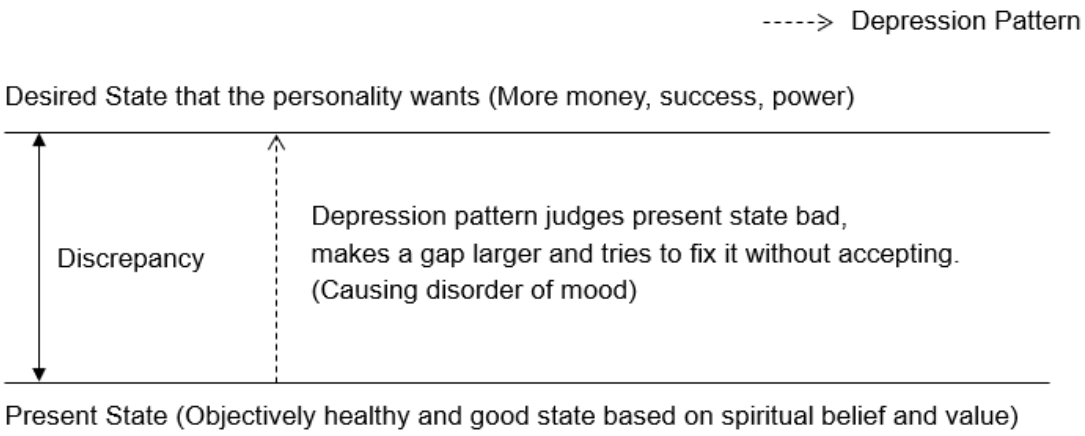

Figure 15. Disorder of Mood by Depression Pattern

As shown in Figure 15, MBCT explains that the depression, which can be said spiritual anxiety and pain, arises from pessimism about reality and disparaging oneself in the process of sensing the discrepancy between desired state that the personality wants and present state, judging present state bad, making the gap larger than reality, and refusing to acknowledge the reality and trying to fix it. And MBCT explains that this depression pattern recurs because this is based on the habitual personality.

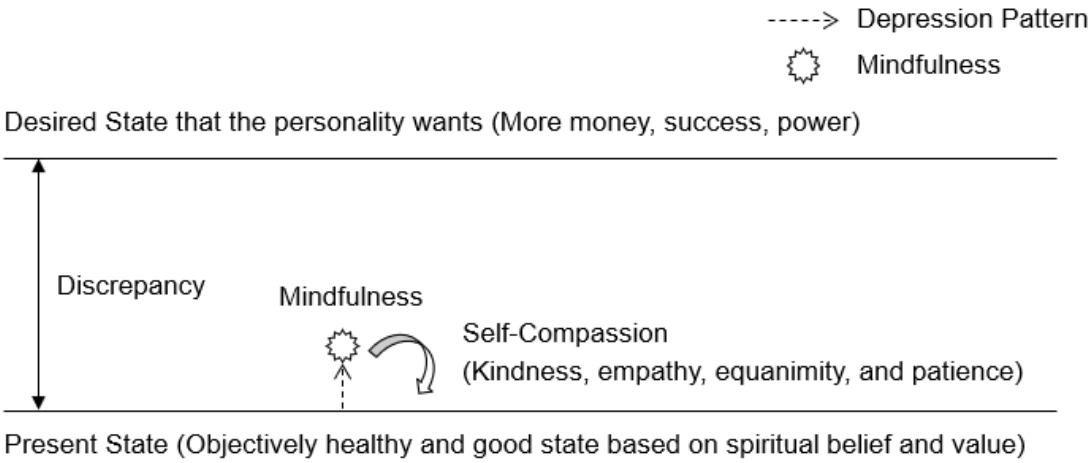

Figure 16. Mechanism of MBCT

And the role of MBCT in preventing depression patterns is shown in Figure 16. MBCT recognizes the occurrence of the habitual depression pattern by the personality, does not judge or distort the reality, looks at reality as it is, and does not pessimize the reality or disparage oneself.

In addition, Kuyken et al. (2010) described that MBCT includes self-compassion of feelings with kindness, empathy, equanimity, and patience, which is very important to change depression patterns along with mindfulness.

Through these effects of MBCT, Sipe et al. (2012) described, the individual can regard distressing cognitions as just mental events and cultivate moment-by-moment awareness.

As such, MBCT suggested the solution to reduce the chronic and recurrent spiritual anxiety and pain based on mindfulness in the field of psychology.

In summary, MBCT describes that spiritual anxiety and pain is caused by the depression pattern due to the personality that wants more and is obsessed over success in daily life, and that spiritual anxiety and pain is bound to recur because the depression pattern is habitual by the

personality. And MBCT reduces spiritual anxiety and pain by recognizing this negative depression pattern through mindfulness and giving warm and positive feelings to the current oneself with self-compassion.

Here, I would like to propose MBCS by applying the principle of MBCT to the organization based on the view that chronic accidents of the organization are similar to chronic spiritual anxiety and pain of the individual, and chronic accidents are caused due to dysfunctional pattern by the habitual organizational culture similar to depression pattern of the individual by the habitual personality.

As Segal et al. (2018) previously described depression as “disorder of mood”. From this definition of depression, we can also describe the chronic accident as the result of “disorder of working mood” that affects members’ capacity to work safely and leaves members feeling obsessive-compulsive about performance.

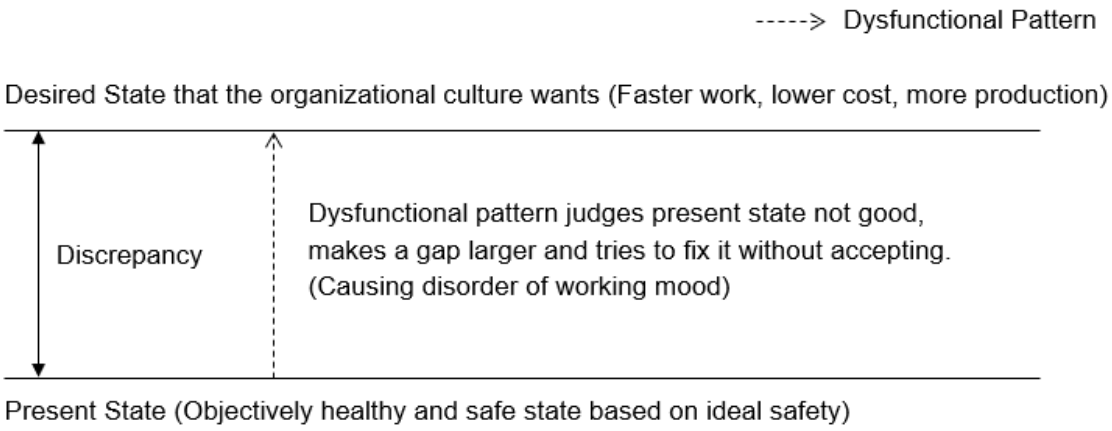

Figure 17. Disorder of Working Mood by Dysfunctional Pattern

As such, as shown in Figure 17, when the organization is viewed from a similar perspective to the individual, the dysfunctional pattern can occur due to the organizational culture that wants more profits and is obsessed over success in daily business. Therefore, the current healthy and safe state within the organization towards *ideal safety* is judged not good, and members who do not produce more, make more profits, and work faster can be devalued, and this dysfunctional pattern causes disorder of working mood, which is the cause of unsafe acts and accidents. And it is bound to be patterned and recurred by the habitual organizational culture. Therefore, accidents continue to occur at a certain level in the organization.

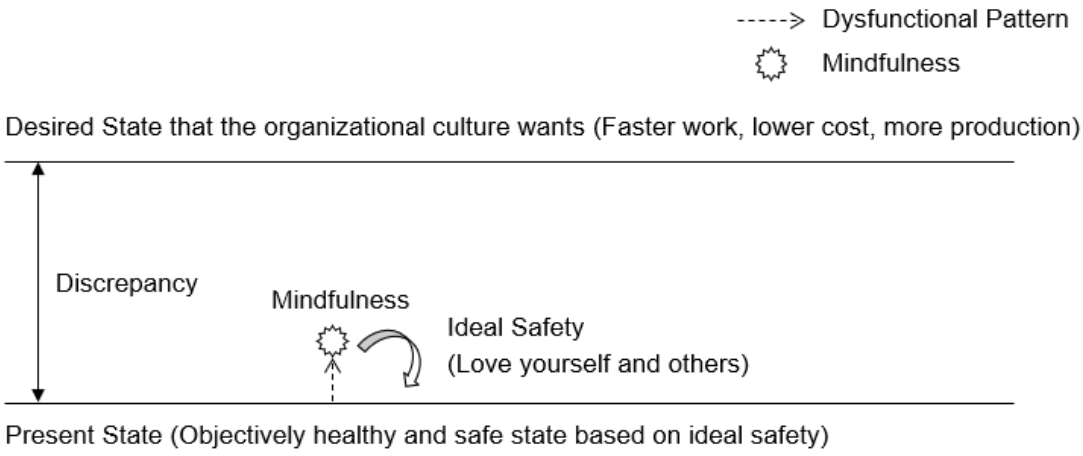

Figure 18. Mechanism of MBCS

Therefore, as shown in Figure 18, it is necessary to intentionally recognize this habitual dysfunctional pattern by the organizational culture based on mindfulness, and to pursue *ideal safety* by allowing the current healthy and safe state to be viewed positively and importantly based on the ideal and universal value, such as MBCT's self-compassion.

We need to note that meditation plays a role in reducing spiritual anxiety and pain based on mindfulness, as well as pursuing spiritual belief and value based on religious faith, allowing individuals to gain spiritual fullness and achieve survival in spiritual aspect separately from the survival and success in daily life pursued by the personality.

Therefore, in order to achieve *ideal safety* and the integrity of the organization, just as the individual pursues survival in spiritual aspect through meditation based on spiritual belief and value, it is necessary for members not only to recognize the dysfunctional pattern through mindfulness, but also to intentionally pursue *ideal safety* by giving *ideal safety* the ideal and universal value separate from the organizational culture.

As will be discussed in more detail in the next chapter, MBCS intentionally pursues *ideal safety* based on the ideal and universal value of *love*. *Love* and *charity* are values pursued by most religions and essential values for survival in the spiritual aspect of the individual. And considering the attribute of *ideal safety* that can be achieved by loving oneself and colleagues sincerely, we can say that *ideal safety* is fundamentally similar to the characteristics of love. Therefore, MBCS intends to give *ideal safety* the ideal and universal value of *love*, which will serve as the fundamental foundation and fuel for members to voluntarily implement MBCS. And this value-making is related to safety faith, so we will discuss it in more detail in the next chapter dealing with spiritual safety leadership.

Finally, MBCS enables members to maintain moment-by-moment safety awareness based on mindfulness, and ultimately achieves the integrity of organization and survival in the spiritual aspect through the value of *love*. As shown in Table 4, we can comprehensively compare the main contents of MBCT and MBCS.

Table 4. MBCT and MBCS

	MBCT	MBCS
Object	Individual	Organization
	Chronic and relapse of depression	Continuous accidents
Discrepancy	Desired state (More money, success, power)	Desired state (More output, faster work, lower cost)
	Present state (Normal and healthy)	Present state (Healthy and safe)
Judgement	“My life is bad, there is no hope, I can’t accept it and should fix it.”	“My work is not enough and behind, so I should work faster and need more output."
Pattern	Depression pattern (Habitually react)	Dysfunctional pattern (Culturally react)
Mood	Disorder of mood (Pessimistic mood)	Disorder of working mood (Compulsive mood)
Result	Depression	Unsafe act & accident
Core skill	Mindfulness	
	Moment-by-moment awareness	Moment-by-moment safety awareness
Attribute	Self-compassion	Love
	Regard yourself with kindness, empathy, equanimity, and patience	Love yourself and others
Purpose	Staying well and preventing future relapse of depression	Staying safe and preventing future recurrence of accident

Here, if the organizational culture itself that creates such disorder of working mood is the problem, it can be asked once again that improving and changing such an organizational culture itself will solve the problem and continuous accidents will not occur. However, as discussed earlier, changing the organizational culture itself is not easy because it is a matter related to the survival of the organization. And this is similar to the situation in which it is easy to say to the individual suffering from depression to change personality because everything is about personality, but it is not easy to change the personality itself for him or her.

Therefore, just as the individual cannot easily change the personality itself, but can prevent chronic and relapse of depression and maintain the healthy mental state through MBCT, the organization could also prevent continuous accidents and pursue *ideal safety* through MBCS. MBCS will change the working mood of the organization healthily, which will eventually be gradually reflected in the organizational culture in the long run.

In fact, MBCT is a treatment that consists of several programs to recognize the occurrence of the depression pattern and maintain moment-by-moment awareness to prevent depression. Therefore, specific programs must be developed in order for MBCS to actually be applied to the organization. Segal et al. (2018) developed an MBCT program consisting of eight sessions, which includes practices such as raisin exercise, body scan, sitting meditation, stretch and breath meditation, mindful movement, breathing space, mindfulness walking, and working with difficulty meditation. Similarly, MBCS can develop programs for self-safety cognition based on MBCT.

And Baer et al. (2004) described four mindfulness skills as, “observing, describing, acting with awareness, and accepting without judgement”, we can also develop the core skill of MBCS as “observing safety, describing safety, acting with safety awareness, and accepting safety without judgement”.

Since MBCS applies to the organization, it can consist of group training programs that ensure that the organization itself and members maintain moment-by-moment safety awareness at all times and activities that members actually perform when working.

First, the group training can include “Sitting and Walking Safety Awareness”, “Mindfulness Movement”, and “Focused Safety on Routine Daily Work” based on MBCT. And members must regularly participate in the training program because the awareness is always led by the organizational culture to *perceived safety*. And the fact that the organization itself maintains moment-by-moment safety awareness is directly related to the fact that the top management maintains moment-by-moment safety awareness. Therefore, MBCS training for top management should be operated and the top management should clearly express the willingness to pursue *ideal safety* and improve the organization’s own moment-by-moment safety awareness, while leading the organizational culture.

Second, the work-related activities can be composed of pre-work practice, during-work practice. As pre-work practice, “Stretch and Breath Safety Awareness” can be conducted at the team level to identify risks and pledge safety work in the entire work, and then “3-minute Breathing Space” can be conducted at the individual level to check the risks of personal work and recognize one’s own safety. And “Tool Box Meeting”, which is an existing safety activity, can also be operated as pre-work practice at the team level from the perspective of MBCS. And as during-work practice, we can maintain safe behavior through “Body Scan” and “Mindfulness Working”, and check the safety of colleagues with “Colleague Observation” and “Safety Conversation”. In addition, we can be always aware of the risks present during work and prepare for sudden risks through “Moment-by-Moment Hazard Awareness”, and we can always secure a safe work state through “Right to Stop Working”.

And the role of the safety department is important for these training programs and activities to operate properly. The church plays a role in allowing the individual to pursue spiritual belief and value separately from daily life dominated by the personality, systematizing spiritual belief and value, and guiding the individual. Therefore, the safety department needs to play some of the same roles as the church of religion separate from the organizational culture. The organization is basically dominated by the organizational culture, so the safety department should build an environment of MBCS, train members and lead the members to moment-by-moment safety awareness separately apart from the organizational culture such as production, quality and *perceived safety*.

Overall, the basic premise of MBCS is to recognize the value of *ideal safety* at all times and intentionally practice it though self-safety cognition, and to perform a safe work through moment-by-moment safety awareness. This research presents examples of applicable training programs and activities of MBCS, but further discussion about specific training programs and activities of MBCS is needed through future research.

MBCS activities do not cover all safety activities. For sure, the existing safety management system and safety activities should also be systematically carried out and MBCS play a role in operating existing activities more efficiently by securing self-safety cognition.

Just as meditation plays the role of self-cultivation so that individuals can pursue spiritual belief and value in daily life, MBCS can be seen as self-cultivation performed by the organization so that the organization can pursue the integrity of the organization in daily business.

4.4 Spiritual Safety Leadership

In the previous chapter, we looked at how to perform self-safety cognition on *ideal safety* through MBCS.

However, fundamental foundation and fuel is needed for members to voluntarily carry out such self-safety cognition. This is similar to the need for fundamental foundation and fuel in religion such as spiritual faith for spiritual fulfillment and survival to voluntarily engage in religious activities.

Idinopulos (1998) described that religion plays a role in providing answers to the ultimate questions "of meaning, of aim or purpose, of self-identity". These questions are related to the survival in the spiritual aspect of the individual and spiritual faith is formed in the process of finding answers to these questions, which serve as fundamental foundation and fuel for the individual to voluntarily and intentionally engage in religious activities.

Idinopulos (1998) also described, "a religious life, filled with energy and faith, providing vision for living and a will-to-live, is a whole life that cannot be reduced to functions." In this aspect of religion, we can see that spiritual faith plays an important role in another sense apart from the functional aspects related to survival in daily life. Therefore, if this fundamental foundation and fuel is not secured, religious activities end in a one-time event and the individual returns to their daily life patterns dominated by the personality.

Spiritual faith acts as a strong foundation and fuel for self-cognition in religious meditation, so the individual intentionally and periodically takes time to practice meditation based on spiritual faith. Therefore, MBCS also needs something that serves as a fundamental foundation and fuel for members to voluntarily practice it, and we can call it safety faith, similar to spiritual faith.

The survival in daily business is the most important in organizations, but when members recognize that the value of *ideal safety* is as important as the value emphasized by the organizational culture, members will intentionally and voluntarily pursue *ideal safety* based on MBCS. Therefore, just as spiritual faith serves as the fundamental foundation and fuel for such intentional religious activities, MBCS needs to form the safety faith that can serve as the fundamental foundation and fuel.

Idinopulos (1998) described spiritual faith through the follow analogy:

> "ask them how they would identify themselves as Greek Orthodox and you will hear a recital of ritual observances and traditional acts of faith that leave no doubt that their faith is not a matter of what is believed or thought about, but rather what is done or felt or imagined."

As such, we can feel that spiritual faith is different from the individual's daily life, which is related to the rational and reasonable area, from the terms *felt* and *imagined*. And we can also consider that the safety faith is different from the organizational culture, which is related to the rational and reasonable area. However, safety faith in MBCS is not the same as the religious concept, but rather a fundamental conviction of members in the value of *ideal safety* necessary to pursue organizational integrity and survival in spiritual aspect.

Recently, interest in spirituality in the organization has been increasing for spiritually healthy organization and Spirituality and Religion in the Workplace (SRW) has emerged as an academic approach to it.

Benefiel et al. (2014) described that SRW is rooted in the concept of a "calling" held by the protestant work ethic and the faith at work movement in Europe and the United States in the late 19th century. And he described the reason for the recent interest in SRW as, "spiritual solutions

to ease tumultuous social and business changes", "answers to complicated contemporary problems resulting from major organizational changes, for example, downsizing, reengineering, and layoffs", and "the need to reduce employee cynicism and mistrust". And Duchon & Plowman (2005), as cited in Benefiel et al. (2014), described that SRW includes "a recognition that employees have an inner life", "an assumption that employees desire to find work meaningful", and "a commitment by the company to serve as a context or community for spiritual growth".

In this regard, in the field of leadership, Fry (2003) proposed the theory of spiritual leadership, which is the most representative and developed theory of SRW. Fry (2003) defined spiritual leadership as, "comprising the values, attitudes, and behaviors that are necessary to intrinsically motivate one's self and others so that they have a sense of spiritual survival through calling and membership".

Therefore, here I would like to propose spiritual safety leadership to form such a safety faith in the organization based on Fry's spiritual leadership. The reason why spiritual safety leadership is proposed for the formation of safety faith is that the core role of leadership is motivation for members. And Schein (2004) describes leadership as, "dynamic process of culture creation and management are the essence of leadership, and leadership and culture are two sides of the same coin." Therefore, we can say that spiritual leadership plays a role in creation and management of the spiritual aspect of the organization, just as leadership plays a role in creation and management of the organizational culture.

In SRW, the term *spirituality* is used separately from the term *religion*, and Dalai Lama (1999), as cited in Fry (2003), also described the difference as religion is related to faith and spirituality is related to qualities of the human spirit. Nevertheless, this research intends to

represent trust and conviction in the value of safety, I would like to use the term *safety faith*. However, safety faith is closer to the concept of spirituality than to the religious concept.

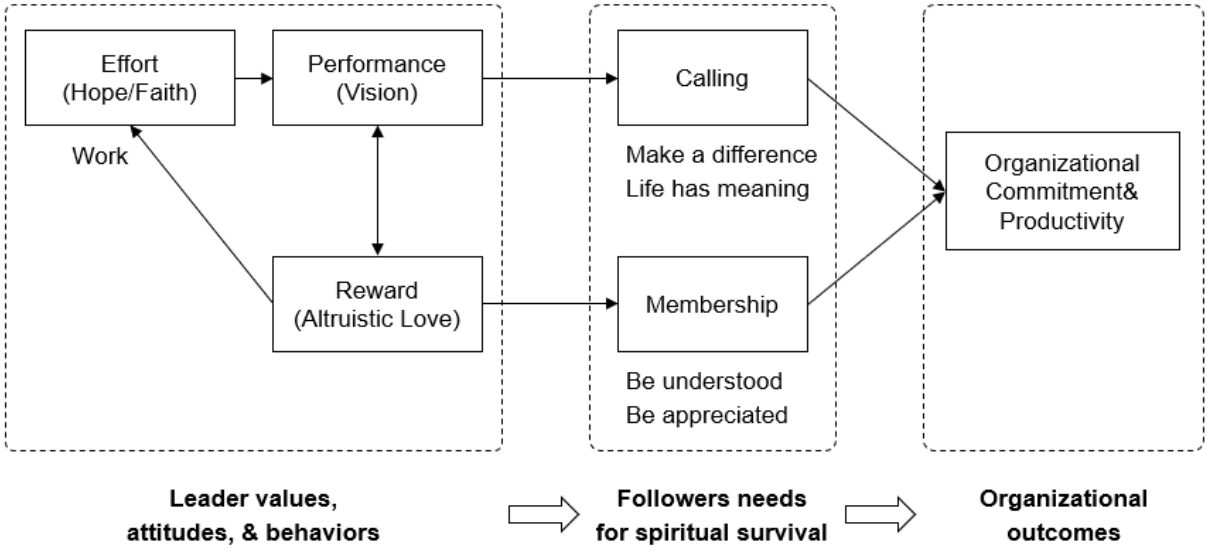

Figure 19. Fry's (2003) Spiritual Leadership Model

Looking at Fry's (2003) spiritual leadership model shown in Figure 19, it describes that spiritual survival of members is necessary in the organization in today's environment of rapid change and high uncertainty and that spiritual survival of members can be achieved through "calling" and "membership".

For spiritual survival, calling plays the role in making members feel that their life has meaning and they are different, and membership plays the role in making members feel that they are understood and appreciated. These calling and membership can be achieved by spiritual leadership, and spiritual leadership is formed by "vision", "altruistic love", and "hope/faith".

In particular, altruistic love plays an important role in spiritual leadership, which aims for spiritual survival of members, based on Smith's (1992) view that all religions emphasize such as humility, charity, and veracity which have similar attributes to altruistic love for spiritual survival.

Fry (2003) also described, "altruistic love allows leader and members to have genuine care, concern, and appreciation for both self and others.", so he described that altruistic love provides "emotional and psychological benefits" to members, which play a key role in improving performance as an "intrinsic motivation" and also provides hope/faith for members to positively move toward vision. Therefore, altruistic love acts as the intrinsic motivation and reward in spiritual leadership Model, driving members to make efforts, and these efforts lead to performance. And, it eventually allows members to feel calling and membership and achieve spiritual survival.

In the end, he described that spiritual leadership based on altruistic love allows members to achieve spiritual survival, and spiritual survival brings positive organizational outcomes.

This research proposes spiritual safety leadership Model based on Fry's (2003) spiritual leadership model as shown in Figure 20. Spiritual safety leadership aims to achieve organizational integrity and survival in the spiritual aspect of members by giving *ideal safety* the attribute of love emphasized in spiritual leadership.

As mentioned above, love is emphasized in most religions, and plays an essential role for the spiritual survival of the individual. And for the integrity of the organization and survival in the spiritual aspect of members, we can focus on the fact that the most important characteristic of *Ideal safety* is related to love. Therefore, spiritual safety leadership tries to express *ideal safety* as "*safety* is love." and apply the core concept of *ideal safety* as "love yourself and others".

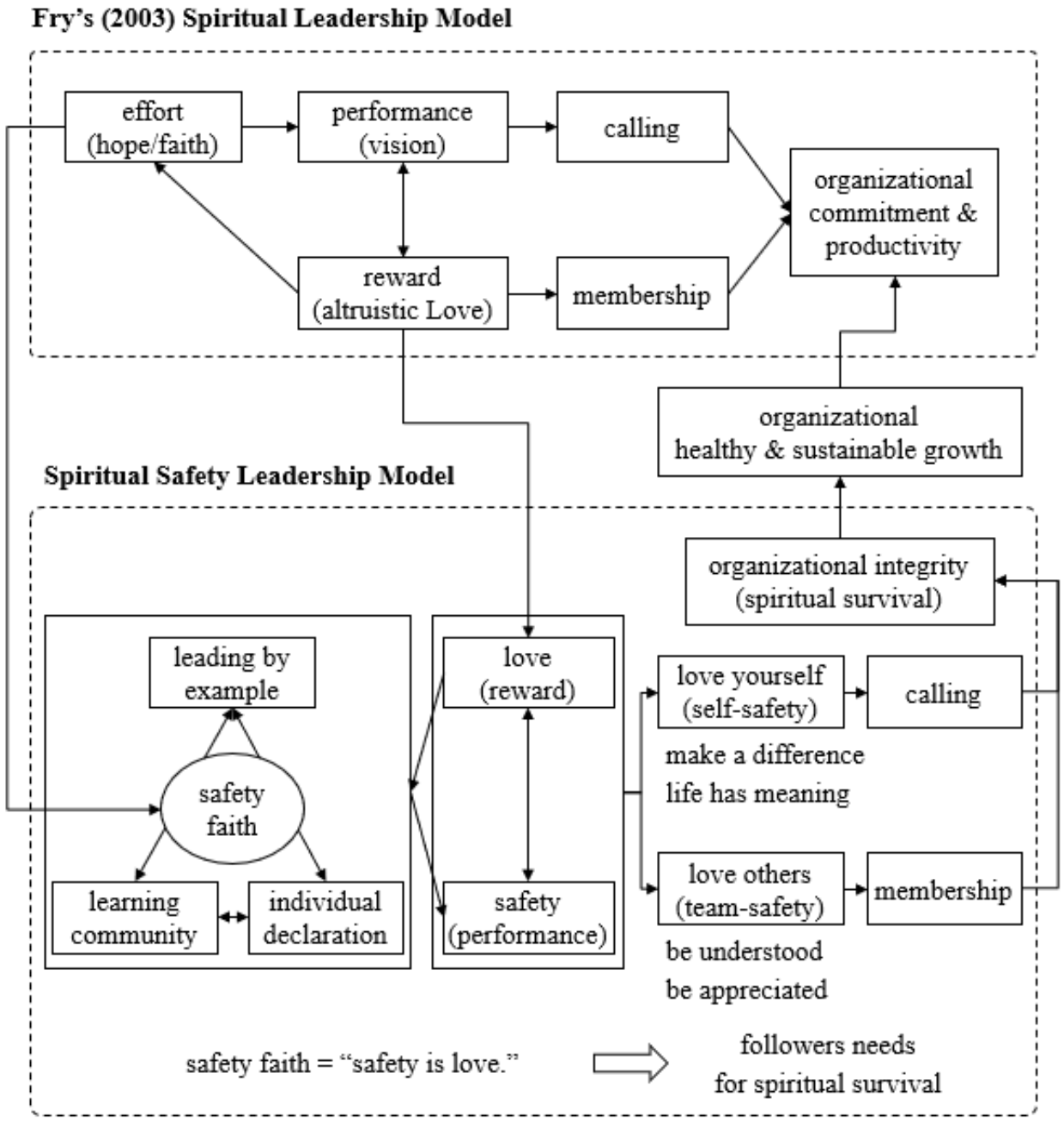

Figure 20. Spiritual Safety Leadership Model

Here, “love yourself” means securing members’ own safety, and through “love yourself”, members can realize their values, feel the importance of what they are doing, and eventually feel the sense of calling.

And “love others” protects each other’s safety among members, and through “love others”, members can feel that each other is understood and appreciated by each other, and through this they can eventually feel the sense of membership

As such, *ideal safety* and love are connected, so we can see that spiritual safety leadership can be realized based on the altruistic love of spiritual leadership, and also members can achieve spiritual survival by pursuing *ideal safety*. And if we give the specific value of love to *ideal safety* so that we can feel directly why *ideal safety* is so important and beneficial to members and the organization, and why we have to practice it and what its purpose is.

In spiritual safety leadership model in Figure 20. Love, as described by Fry (2003), increases the joy, peace, serenity, job satisfaction, and commitment of members, acting as the intrinsic motivation and reward, which eventually lead to improving performance, which is *ideal safety*.

Based on love-based *ideal safety*, members can realize the self-safety from “love yourself” and the team-safety from “love others”. And this realizes the spiritual survival of members based on calling and membership and makes the environment surrounding them better and truthfully, which eventually creates the integrity of the organization and strengthens the organization’s intrinsic power leading to organizational outcomes.

And *ideal safety* can be realized by safety faith, which members are fundamentally convinced of the importance and effect of *ideal safety*, which is “safety is love”. Spiritual safety

leadership referred to how to improve believers' spiritual faith in most religions to form safety faith.

In most religions, leading by example, learning community, and individual declaration play the key role in forming and improving the spiritual faith.

First of all, leading by example plays an important role in starting the individual to have faith in a particular value, and when the individual has uncertainty about that value, the individual can have faith with confidence when the leader shows the importance of that value and shows it helps the organization. We can see this in the leading of Jesus and Buddha at the beginning of Christianity and Buddhism. Therefore, the top management and leaders should show the importance of love-based *ideal safety* to realize the integrity of the organization and take care of the safety of members with sincere love, after which safety faith of members can be formed based on this leading by example.

And we can see that if individuals live a busy daily life again, various questions arise about such values and constantly conflict between their daily lives and those values. Therefore, they regularly participate in learning communities for collective consciousness, and maintain and improve the spiritual faith by solving the questions and sharing experiences with members. And also, through learning communities, members' sense of belonging is strengthened, and the spiritual faith is spreading among the members. We can see this through religious gathering and group Bible study, and we can see that these activities are carried out periodically.

The organization can also develop safety faith through learning communities for collective consciousness such as periodic safety gathering and group safety study with members. And in order to vitalize this collective consciousness, a safety manager who has experience and can

convey wisdom is needed, and the safety department needs to play roles like a church to systematically lead these activities separate from daily work activities.

Finally, the individual declaration plays a role in publicizing the individual's will to practice that value and self-strengthening the belief, which is implemented by individual decision when the belief is formed to some extent through the preceding processes. This can be seen as a symbolic act of belief, such as baptism in religion, and these acts give a strong motivation for practical belief. The organization can also consider activities such as the safety declaration for voluntary practice of *ideal safety* and grant safety symbols in order for members to express their willingness to practice *ideal safety* and to remind the importance of *ideal safety*.

As such, by referring to religious activities to improve spiritual faith, the organization can also form and improve safety faith, which provides the fundamental foundation for members to voluntarily practice *ideal safety*. Furthermore, members can feel the survival in the spiritual aspect, and the organization will be able to achieve healthy and sustainable growth based on the integrity of the organization.

Once again, it does not mean that safety will be turned into religion through spiritual safety leadership. Since the organizational culture has its own advantages and meaning in the environment and resources given to them for the survival and growth of the organization and gradually changes, so apart from the organizational culture, spiritual safety leadership aims to form the trust and conviction of members to *ideal safety* and encourage members to voluntarily practice *ideal safety* based on this.

5. CONCLUSIONS

This research has been conducted from the standpoint of safety managers to substantially improve the level of safety of the organization. They are making great efforts to eradicate accidents, but nevertheless, when looking at the continuous accidents, they may feel the limitations of safety management itself. Therefore, they need specific and practical solutions, and recently, the safety culture has attracted attention.

The safety culture has recently become of interest due to the need for members to voluntarily implement safety and is an essential concept to move toward the organizational culture that prioritizes safety. However, the safety culture is ambiguous when actually applied and accidents still continue to occur in organizations. And the organizational culture to which the safety culture belongs is stable and difficult to change, so it will be improved through a gradual process.

Therefore, this research approaches from a different perspective from the perspective that has approached safety within the organization so far so that members can voluntarily practice safety. This does not mean that the concept of the safety culture is wrong. However, in order to jump to the *ideal safety* that organizations want, voluntary safety practice by members is essential, and this research proposes the substantially necessary part for this. And based on this, the safety culture will gradually improve.

It can be said the organizational culture is the personality of the organization. It is difficult for the individual to change the personality itself for ideal and universal value, but individuals with various personalities can pursue ideal and universal value in common through religion. Therefore, this research insists that safety should be recognized separately from the organizational culture and additional efforts should be made periodically for safety awareness and proposes a common way

for organizations with various organizational cultures to pursue *ideal safety* based on MBCS and spiritual safety leadership.

Through this, the organization will be able to achieve the integrity of organization and survival in the spiritual aspect in an increasingly complex environment, and further achieve sustainable and healthy growth. In the end, this will gradually improve the safety culture, and the effectiveness of the safety management system and various safety activities will be higher based on the safety awareness of the members.

And also, based on this concept, the level of safety of the organization can be divided into four levels.

The first level is a reactive level without safety management system and voluntary safety awareness, and the second level is a managerial level in which safety is managed by the safety management system, although there is no voluntary safety awareness. And the third level is a proactive level in which the effectiveness of the safety management system increases based on voluntary safety awareness, and the fourth level is a generative level in which *ideal safety* settles into the organizational culture based on voluntary safety awareness.

Since this research proposes the conceptual aspect, it is necessary to establish specific programs and activities through additional research. In addition, future research needs to verify the actual effect and applicability.

REFERENCES

1. Benefiel, M., Fry, L.W., & Geigle, D. (2014). Spirituality and religion in the workplace: History, theory, and research. *Psychology of Religion and Spirituality, 6*(3), 175-187.

2. Baer, R.A., Smith, G.T., & Allen, K.B. (2004). Assessment of mindfulness by self-report: The Kentucky Inventory of Mindfulness Skills. *Assessment, 11*(3), 191-206.

3. Cabrera, D.D., Isla, R., & Vilela, L.D. (1997). An evaluation of safety climate in ground handling activities. *Aviation Safety*, 255-268.

4. Cheyne, A., Cox, S., Oliver, A., & Tomás, J.M. (1998). Modeling safety climate in the prediction of levels of safety activity. *Work & Stress, 12*(3), 255-271.

5. Choudhry, R.M., Fang, D., & Mohamed S. (2007). The nature of safety culture: A survey of the state-of-the-art. *Safety Science, 45*(10), 993-1012.

6. Clark, K.B., & Fujimoto, T. (1990). The power of product integrity. *Harvard business review, 68*(6), 107-118.

7. Clarke, S. (2000). Safety Culture: under-specified and overrated? *International Journal of Management Review, 2*(1), 65-90.

8. Cole, K.S., Stevens-Adams, S.M., & Wenner, C.A. (2013). *A literature review of safety culture*. Albuquerqu, NM: Sandia National Laboratories.

9. Cooper, M.D. (2000). Towards a model of safety culture. *Safety Science, 36*(2), 111-136.

10. Cooper, M.D., & Phillips, R.A. (1994). Validation of a safety climate measure. In *Occupational Psychology Conference of the British Psychological Society, 3*(5), 104-116.

11. Cox, S., & Cox, T. (1991). The structure of employee attitudes to safety: a European example. *Work and Stress, 5*(2), 93-106.

12. Cox, S., & Cox, T. (1996). *Safety systems and people*, Butterworth-Heinemann.

13. Cox, S., & Flin, R. (1998). Safety culture: Philosopher's stone or man of straw? *Work & Stress, 12*(3), 189-201.

14. Duchon, D., & Plowman, D.A. (2005). Nurturing the spirit at work: Impact on work unit performance. *The Leadership Quarterly, 16*(5), 807-833.

15. Ellwood, C.A. (1913). The social function of religion. *American Journal of Sociology, 19*(3), 289-307.

16. Fang, D., Chen, Y., & Wong, L. (2006). Safety climate in construction industry: A case study in Hong Kong. *Journal of Construction Engineering and Management, 132*(6), 573-584.

17. Flin, R., Mearns, K., Gordon, R., & Fleming, M.T. (1998, June). Measuring safety climate on UK off-shore oil and gas installations. In *SPE International Conference on Health, Safety, and Environment in Oil and Gas Exploration and Production*, OnePetro.

18. Flin, R., Mearns, K., O'Conner, P., & Bryden, R. (2000). Measuring safety climate: identifying the common features. *Safety Science, 34*(1-3), 177-192.

19. Fry, L.W. (2003). Toward a theory of spiritual leadership. *The Leadership Quarterly, 14*(6), 693-727.

20. Geller, E.S. (1994). Ten principles for achieving a total safety culture. *Professional Safety, 39*(9), 18-24.

21. Guldenmund, F.W. (2000). The nature of safety culture: a review of theory and research. *Safety Science, 34*(1-3), 215-257.

22. Guldenmund, F.W. (2010). (Mis)understanding safety culture and its relationship to safety management. *Risk Analysis: An International Journal, 30*(10), 1466-1480.

23. Hale, A.R., Guldenmund, F.W., Van Leonhout, P.L.C.H., & Oh, J.I.H. (2010). Evaluating safety management and culture interventions to improve safety: Effective intervention strategies. *Safety science, 48*(8), 1026-1035.

24. Huberts, L.W. (2018). Integrity: What it is and why it is important. *Public Integrity, 20*(sup1), S18-S32.

25. Hofmann, D.A., & Stetzer, A. (1996). A cross-level investigation of factors influencing unsafe behaviors and accidents. *Personnel Psychology, 49*(2), 307-339.

26. Hofstede, G., Hofstede, G.J., & Minkov, M. (2010), *Cultures and organizations: software of the mind: Intercultural cooperation and its importance for survival*. McGraw-Hill.

27. HSC. (1993). Third report: Organizing for safety. ACSNI study group on human factors. *London: HMSO*.

28. Hopkins, A. (2006). Studying organizational cultures and their effects on safety. *Safety Science, 44*(10), 875-889.

29. Idinopulos, T.A. (1998). What is religion? *CrossCurrents*, 366-380.

30. INSAG. (1986). *Summary report on the post-accident review meeting on the Chernobyl accident (Safety Series 75-INSAG-1)*. Vienna: IAEA.

31. INSAG. (1991). *Safety culture (Safety Series 75-INSAG-4).* Vienna: IAEA.

32. ISO. (2018). *ISO 45001:2018, Occupational health and safety management systems – Requirements with guidance for use*. Geneva: ISO.

33. Kuyken, W., Watkins, E., Holden, E., White, K., Taylor, R.S., Byford, S., Evans, A., Radford, S., Teasdale, J.D, & Dalgleish, T. (2010). How does mindfulness-based cognitive therapy work? *Behaviour Research and Therapy, 48*(11), 1105-1112.

34. Lama, D. (1999). His holiness the. *Ethics for the New Millennium*.

35. Lee, T. (1998). Assessment of safety culture at a nuclear reprocessing plant. *Work & Stress, 12*(3), 217-237.

36. Li, Y., & Guldenmund, F.W. (2018). Safety management systems: A broad overview of the literature. *Safety Science, 103*, 94-123.

37. Mearns, K.J., & Flin, R. (1999). Assessing the state of organizational safety-Culture or climate? *Current Psychology: Developmental, Learning, Personality, Social, 18*(1), 5-17.

38. Mearns, K.J., Whitaker, S., Flin, R., Gordon, R., & O'Conner, P. (2000). Benchmarking human and organizational factors in offshore safety. *HSE OTO,* 36.

39. NRC. (2011). Final safety culture policy statement. (NRC-2010-0282). *Federal Resister, 76*(114), 34773-34778.

40. Ostrom, L., Wilhelmsen, C., & Kaplan, B. (1993). Assessing safety culture. *Nuclear Safety, 34*(2), 163-172.

41. Parker, D., Lawrie, M., & Hudson, P. (2006). A framework for understanding the development of organizational safety culture. *Safety Science, 44*(6), 551-562.

42. Paté-Cornell, M.E. (1993). Learning from the piper alpha accident: A postmortem analysis of technical and organizational factors. *Risk Analysis, 13*(2), 215-232.

43. Pidgeon, N.F. (1991). Safety culture and risk management in organization. *Journal of Cross-Cultural Psychology, 22*(1), 129-140.

44. Rasmussen, J. (1997). Risk management in a dynamic society: A modeling problem. *Safety Science, 27*(2-3), 183-213.

45. Reason, J. (2000). Safety paradoxes and safety culture. *Injury Control and Safety Promotion, 7*(1), 3-14.

46. Schein, E.H. (2004). *Organizational culture and leadership (3rd edition)*. Jossey-Bass.

47. Segal, Z.V., Williams, J.M.G., & Teasdale, J.D. (2018). *Mindfulness-based cognitive therapy for depression*. Guilford Publications.

48. Sipe, W.E.B, & Eisendrath, S.J. (2012). Mindfulness-based cognitive therapy: Theory and practice. *The Canadian Journal of Psychiatry, 57*(2), 63-69.

49. Smith, H. (1992). The world's religion. New York: Peter Smith.

50. Teasdale, J.D., Segal, Z.V., Williams, J.M.D., Ridgeway, V.A., Soulsby, J.M, & Lau, M.A. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology*, *68*(4), 615-623.

51. Uttal, B. (1983). The corporate culture vultures. *Fortune, 108*(8), 66-72.

52. Wiegmann, D.A., Zhang, H.Z., Von Thaden, T.L., Sharma, G., & Gibbons, A.M. (2004). Safety culture: An integrative review. *The International Journal of Aviation Psychology, 14*(2), 117-134.

53. Yule, S.J., Flin, R., & Murdy, A.J., (2001, April). Modeling managerial influence on safety climate. In *Poster presented at Society for Industrial and Organizational Psychology (SIOP) Conference.*

54. Zinn, J.K. (1994). Wherever you go, there you are: Mindfulness meditation in everyday life. *Hyperion*, 78-80.

55. Zohar, D. (1980). Safety climate in industrial organizations: Theoretical and applied implications. *Journal of Applied Psychology*, *65*(1), 96-102.

56. Zohar, D. (2010). Thirty years of safety climate research: Reflections and future directions. *Accident Analysis and Prevention, 42*(5), 1517-1522.