

The Sinking of the Unsinkable Titanic: Mental Inertia and Coordination Failures

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Abstract

This study investigates the sinking of the Titanic from the theory of human agency derived from Austrian economics, interpretation sociology and organizational theories. Unlike most arguments in organizational and management sciences, this study offers a subjectivist perspective of mental inertia to understand the Titanic disaster. Specifically, this study will argue that the fall of the Titanic was mainly due to a series of coordination and judgment failures that occurred simultaneously. Such systematic failures were manifested in the misinterpretations of the incoming events, as a result of mental inertia, by all parties concerned in the fatal accident, including lookouts, telegram officers, the Captain, lifeboat crewmen, architects, engineers, senior management people and owners of the ship. This study concludes that no matter how successful the past is, we should not take experience for granted entirely. Given the uncertain future, high alertness to potential dangers and crises will allow us to avoid iceberg mines in the sea and arrived onshore safely.

Keywords: The R.M.S. Titanic; Maritime disaster; Coordination failure; Mental inertia; Judgmental error; Austrian and organizational economics

1. The Titanic Disaster

*So this is the ship they say is unsinkable.
It is unsinkable. God himself could not sink this ship.*
From Butler (1998: 39)

[The] Titanic... will stand as a monument and warning to human presumption.
The Bishop of Winchester, Southampton, 1912

Although the sinking of the Royal Mail Steamer Titanic (thereafter as the Titanic) is

not the largest loss of life in maritime history¹, it is the most famous one². On 14 April 1912, during her maiden voyage, the Titanic collided with an iceberg off the banks of Newfoundland (Canada), located at 41°46' N, 50° 14' W (*WebTitanic* 2010). The gigantic vessel was mortally wounded and eventually sank in the early morning of the following day. According to *The United States Senate Inquiry Report* (1912), only 31.8 percent of the total 2,228 passengers and crew in the ship survived and about 1,523 died. There is no dearth of studies probing the causes of the sinking of the ship but the reports are largely from sciences or engineering disciplines. Bassett (1998) investigates the disaster from engineering and technologies. She blames on design flaws, leading to the material failure. Marriott (1992) and Maltin (2012) point to optical illusion that was responsible for the sinking of the Titanic. Using forensic technique, Foecke (1998) and Hooper and Foecke (2008) originate a theory that the

¹ The sinking of the Titanic recorded 1,523 people dead. The sinking of the Wilhelm Gustloff by a Soviet Navy submarine with an estimated loss of about 9,500 people in 1945 remains the greatest maritime disaster ever. The sinking of Philippine-registered passenger ferry Doña Paz after colliding with the MT Vector (an oil tanker) with an estimated 4,386 people dead in 1987 is the largest loss of life in human history in peace time (*The World Almanac and Book of Facts* 2008, p.301).

² According to Karl Metelko, the editor of *WebTitanic* (2010), “the story of the Royal Mail Steamer Titanic has passed down from generation to generation and shows no sign of ever dying. Numerous plaques, statues, fountains, and even buildings were erected in memory of the sinking in the aftermath of the disaster...Interest in the Titanic story has never strayed far from the public eye since then”. This includes movies in 1953, 1958, 1979, 1985, 1997 and 3D Titanic in 2012. Museums, memorials and monuments to the victims were established in Southampton, Liverpool and Belfast in the United Kingdom; New York and Washington, D.C. in the United States; and Cobh in Ireland. Thus, Metelko further claims that “the story of the Titanic has become so entrenched in our society that it has become a part of our culture. She, and those she took with her, shall forever remain in our imagination and hearts”.

Titanic disaster was due to rivets failures. Few studies in social science examine human or social factors that led to the sinking of the Titanic, though Hall (1986) investigates the relationship between social class and survival on the Titanic and Frey et al (2011) focus on the chance of surviving in the Titanic disaster from social norms perspective. Perhaps, the most relevant piece of the paper to my present study is Battles (2001). Using the notions of active and latent errors developed by Reason (1990), he argues that telegraph operators, lookout officers, lifeboat crewmen, the captain and even the ship owners and designers of the Titanic were not culpable for the accident though some of them might be considered negligent. For Battles, the chief executive officer was responsible for the disaster. In Battles' words (2001: 152), "the lack of adequate lifeboats was the single greatest cause for the loss of life on the Titanic, and that was a decision made by the chief executive officer. Top management can sometimes be the enemy of safety. Everyone in the organization is accountable for his or her decisions and actions."

This study explains the fall of the Titanic from the theory of human agency derived from Austrian economics, interpretation sociology and organizational theories. It argues that the sinking of the Titanic was mainly due to a series of coordination and judgment failures that occurred simultaneously. Such systematic failures happened because of collective misinterpretations of the incoming events, as a result of mental inertia, by crew members. Unlike most theories in organizational science, this study offers a subjectivist perspective of mental inertia and argues that systematic coordination failures were largely responsible for the Titanic disaster. The paper is organized as follows. In Section 2, a subjectivist perspective of mental inertia and coordination failure will be presented. The theory is applied to understand how group inertia and coordination failures occurred simultaneously in the voyage (Sections 3 to 10). In Section 11, a lesson to be learnt from this most notable maritime disaster in

human history will be delivered.

2. Mental Inertia and Coordination Failures in the Organization: A Subjectivist Diagnosis

Coordination of economic activities within an organization is always a challenging issue in the theories of the firm and organization. A major problem in organizational coordination is how to ensure each member finishes his or her job without mistake and thus achieve organizational goals. In particular, it is all about how to ensure team members make good judgment in their positions and constantly stay alert to the changing environment, not only during crisis but also in the seemingly peaceful condition. Occasional judgmental error and breakdown in communication within an organization is not unusual. Most of the time, the problem can be fixed afterwards. However, simultaneous misjudgments by all members and hence systematic coordination failures in an organization can bring about a catastrophic result to the management. How can systematic misjudgment and coordination failure be possible? This study argues that mental inertia and hence routine interpretation of the incoming events, is responsible for coordination failures. Organizational inertia has been studied in economics (e.g. Leibenstein 1976: 112; Langlois and Robertson 1995: 101-119), psychology (e.g. Weick and Quinn 1999: 361-388) and management (e.g. Kelly and Amburgey 1991: 591-612). Of particular interest to the present study is the theory of “action inertia” put forwarded by Godkin and Allcorn (2008: 82-95):

Action inertia appears when managerial responses to environmental activity are too slow or the information gathered is insufficient to guide taking informed actions to beneficial to the organization.... action inertia appears after managerial observations of the external and internal environments are gathered and environmental scanning ceases. Something has been learned that is fairly

accurate and informative and it guides management decision making but the response is slow, incomplete, ineffective or otherwise deficient.

It is important to note that slow, incomplete, ineffective and deficient responses in communication are the major factors that are mainly responsible for sinking of the Titanic. It remains to explain why “the response is slow, incomplete, ineffective or otherwise deficient”. In this paper, we offer a subjectivist explanation of the slow and inefficient responses, manifesting in mental inertia in the process of interpretation of the external events.

In everyday life, we make sense out of other people’s actions (Weick, 1969; 1995). Making sense of the external world is interpretation (Weick 1995: 13-14). Correct interpretation of the incoming events helps bring about coordination of activities. During the process of sensemaking, knowledge is gradually built up in our minds. The stock of knowledge in our minds would serve as a scheme for interpreting external events later on. The stock of knowledge in our minds is referred to as “interpretation framework” (Yu 2011: 35). This framework would allow us to form expectations with respects to unfolding events (Schutz 1970:74). Our stocks of knowledge grow in tandem with experience. The stocks of knowledge in our minds can be used as a problem-solving tool in our everyday life.

Interpretation framework (or the stock of knowledge in one’s mind) has a certain time sequence that allows thinking to follow a track. In other words, we see things in a certain way and expect things to be worked out in a certain way. Once incoming information is organized into a pattern, then interpretation framework no longer has to analyze incoming information. All that is required is enough information to trigger the pattern. The mind then follows along a pattern automatically in the same way as a driver follows a familiar road. Over time, habit or inertia develops because the actor simply uses his or her interpretation system routinely. Once we take the experience for

granted, then perception will dominate our decision because the way we look at a situation will determine what we can do about it. Furthermore, unless there is another competing pattern developed in our interpretation framework, anything similar to the previously established pattern will be treated just as if it were that pattern. Mental inertia or lack of alertness to potential crisis means that actor's thinking is locked up in habitual interpretation structures or concepts.

2.1 Mental inertia, coordination failure and emergence of a crisis

Accordingly, a reason for misinterpretation of the incoming events, and hence leading to coordination failure in the organization, is that members take experience too much for granted, thus resulting in mental inertia. It may be argued that each time members of an organization interpret incoming events, they should not take their experience for granted. Unfortunately, it is often the case that individuals are unwilling to disrupt all existing concepts, perceptions or institutions in order to put previous and recent experiences together into new ideas. After a while, existing pattern has survived for too long to change. In other words, over time, each piece of knowledge works together, forming an integrated part of the thinking pattern. By that time, it becomes extremely difficult to change into a new pattern (deBono 1992:17). Hence, mental inertia, the opposite of alertness to the changing world, develops because individuals take experiences for granted and interpret incoming information routinely. As a result, they fail to keep a constant alert to potential crisis. Some members in the organization may be able to escape from the routine. With a different perspective, they “may see something of significance where conventionalists see none, or recognize the possibility of new combinations that the majority with their conventional blinders neglect” (Choi 1997:36; 1999:20). However, those actors are often seen by their peers as deviants, creating troubles to the organization. As a result,

when crisis comes, the organization is unable to tackle the “unexpected” change.

This paper will argue and illustrate that a systematic coordination failure in the Titanic is due to collective mental inertia or routine interpretations of the incoming events by crew members including the captain, telegram officers, lookout crewmen and sailors who handled the crisis.

3. Market Competition and the Making of the Titanic

The Titanic was one of the largest vessels ever made by British shipbuilders. Built in Belfast (Ireland), the Titanic was the second of the three Olympic-class ocean liners owned by the White Star Line³. The ship was constructed by the Belfast shipbuilder, Harland and Wolff Heavy Industries Ltd. (thereafter as Harland and Wolff), which had a long-established relationship with the White Star Line dating back to 1867. Harland and Wolff was given a great deal of freedom in designing the ship for the White Star Line. It was able to spend whatever amount of money needed on the ship and received a five percent profit margin on the top of the production costs (Hutchings & de Kerbrech 2011: 12).

At that time, the White Star Line faced a strong competition from its main rivals Cunard, which had just launched Lusitania and Mauretania, the fastest passenger vessels in service, and the German lines Hamburg America and Norddeutscher Lloyd. Joseph Bruce Ismay, the chairman and managing director of the White Star Line, preferred to compete by size rather than speed and proposed to commission a new luxurious ocean liner that would be bigger than any ship in service (Bartlett 2011: 26). The Titanic had a gross registered tonnage (i.e. carrying capacity) of 46,328 tons and when fully loaded, the ship displaced (weighed) more than 52,000 tons. The Titanic

³ The other two were the RMS Olympic and the HMHS Britannic (originally named Gigantic).

was approximately 269 metres long and about 28.2 metres wide at its widest point. It took 3,000 men and two years to build (*Encyclopædia Britannica* 2012).

In order to promote the company's image on the Titanic's maiden voyage, the Liner put punctuality above all other considerations, keeping a rigid schedule that would guarantee its arrival at the advertised time. Hence, the Titanic sailed near the maximum speed and full capacity in order to be on time. However, it was a new vessel and should be steered with caution on her first voyage. The company and the Captain failed to take this into consideration. Their knowledge frameworks were preoccupied with past successes.

4. Coordination Failure: the Wireless Telegram Communication

The Titanic was equipped with two 1.5 KW spark-gap wireless telegraphs. One set was used for transmitting messages and the other for receiving them (Hutchings & de Kerbrech 2011: 74). The system was one of the most powerful in the world, with a range of up to 1,000 miles (Gill 2010:165). The two wireless operators worked 24-hour shifts. They transmitted messages for passengers and also released warning messages such as weather reports and icebergs to other ships nearby.

On 14 April 1912, Titanic's telegram operators received at least six warning messages of floating icebergs from other ships. Not all of these messages were relayed by radio operators. The first warning came at 09:00 from the RMS Caronia reporting "bergs, growlers and field ice" (Ryan 1985/86:9). Edward John Smith (thereby, as Smith), the Captain of the Titanic, acknowledged the receipt of the message. At 13:42, the RMS Baltic relayed a message from the Greek steamer Athinai, reporting "icebergs and large quantity of field ice today in latitude 41.51 north, longitude 49.52 west." (*The United States Senate Inquiry Report* 1912: 1061; Ryan 1985: 9). At 13:45, the German ship SS Amerika reported that she "passed two large

icebergs" (Ryan 1985: 10). This message never reached Captain Smith or other officers on the Titanic's bridge. A possible explanation for this is that the message may have been forgotten because radio operators had to fix faulty equipment (Ryan 1985/86: 11). SS Californian reported "three large bergs" at 19:30, and at 21:40, the steamer Mesaba reported that it saw "much heavy pack ice and great number large icebergs. Also field ice." (Ryan 1985:11). This message, too, never left the Titanic's telegram room. One radio operator, Jack Phillips, failed to grasp its significance because he was busy in transmitting messages for passengers (Ryan 1985:10). A final warning was received at 22:30 from operator SS Californian, which halted for the night in an iceberg field some miles away, but Phillips, working for a commercial message using Cape Race wireless station in Newfoundland, was annoyed with loud signal and responded, "Shut up! Shut up! I'm working Cape Race." (Ryan 1985: 11).

With all those warning messages received, the crew should be well aware of the icebergs. However, the Titanic's speed was not reduced and the ship continued to advance at 41 km/h, only 3.7 km short of her maximum speed of 44 km/h (Ryan 1985:10). The Titanic's high speed in the sea of floating ice was later criticized as careless and reckless. However, it was argued that such practice was not unusual at the time. According to Fifth Officer Harold Lowe, the normal practice was "to go ahead and depend upon the lookouts in the crow's nest and the watch on the bridge to pick up the ice in time to avoid hitting it" (Mowbray 1912: 278).

As mentioned, the Liner wanted to stick rigidly to a schedule that would guarantee its punctual arrival at the advertised time. The ship was driven at full speed for most of the time, treating hazard warnings, unfortunately, as advisories rather than calls for action. Taking iceberg warnings as routine messages, most captains at that time generally believed that icebergs posed little risk to their navigation. More devastatingly, according to their knowledge, even head-on collisions in the sea had

not been fatal in maritime history. In short, six warning messages were not powerful enough to trigger the nerves of the officers in charge who took experience for granted and were not alert to potential dangers hidden during the night sail.

5. Mental Inertia and Coordination Failure : Officers at the Lookout

As the Titanic approached her fatal collision, most passengers had gone to bed and command of the bridge fell into the hand of First Officer William Murdoch. Lookouts Frederick Fleet and Reginald Lee occupied the crow's nest 29 meters above the deck. As Lookout Frederick Fleet spots an iceberg ahead, he immediately called into the wheelhouse for action. After receiving the message, the 6th Officer Moody then rushed out to the deck to notify First Officer William Murdoch who ordered “Hard a'starboard”, resulting in the ship's tiller being moved all the way to starboard (the right side of the ship) in an attempt to turn the ship to port (left) (Wreck Commissioner of the United Kingdom 1912: 40). However, it was too late.

There are two important issues related to the duties of lookouts. Firstly, why were lookout officers not equipped with binoculars? Arguably, binoculars would not have helped much in a complete darkness except for starlight and the ship's own lights. However, no one can deny that binoculars can help. Otherwise, they would not need to provide binoculars for lookout duties. It is reported that the officers in the Titanic carried out their duties without binoculars because of the confusion at Southampton port. Second Officer David Blair who kept the key for the binoculars “was removed from the crew at the last minute and he forgot to hand in the key to his replacement. Without access to the glasses, the lookouts in the crow's nest were forced to rely on their eyes and only saw the iceberg when it was too late to take action” (*The Telegraph* 2012). Fred Fleet, a survivor, later testified in the official inquiry that if they had had binoculars, they would have seen the obstacle sooner. This incident

reflected the fact that the parties concerned did not take safety issue seriously. They simply assumed that an iceberg collision would never happen. They held a stubborn belief or more precisely, serious mental inertia.

Secondly, the distance between the ship and the iceberg was too short (or too late) for the ship to be steered away from crash.⁴ Binoculars aside, we would ask why lookout officers could not spot the iceberg earlier. One possible reason is the weather condition. Air temperature dropped to near freezing point and water was calm. As one survivor recalled, “the sea was like glass, so smooth that the stars were clearly reflected” (*Portland Oregonian* 1912, April 27). It is now known that such a calm environment is a sign of nearby pack ice. In other words, icebergs were hidden behind the mirror. Paradoxically, if the sea had been rough, with waves bombarding against the icebergs, then the position of icebergs would be more visible. Moreover, in extreme darkness, stray light, such as that from all the light bulbs turned on the ship, actually blocked the unaided human eye from identifying distant objects. Maltin (2012) even argues that “atmospheric conditions in the area that night were ripe for super refraction. This extraordinary bending of light causes miraging ... was recorded by several ships in the area”. The unusual optical phenomenon, in Maltin’s words, “prevented the Titanic’s lookouts from seeing the iceberg in time and the freighter Californian from identifying the ocean liner and communicating with it” (*ibid* 2012).

We do not deny this possibility. However, we still doubt if lookout officers put their watch-out effort in full alert. It is reported that it was the worst ice conditions in North Atlantic in 50 years. Hence, crewmen on board had no way to know this in advance. They took ice condition in April 1912 the same as all previous years.

⁴ The short distance is also related to the speed. However, speed is controlled by the Captain, not the duty of the lookouts. This will be further discussed below.

Although warnings to lookout crewmen for ice and growlers were issued⁵, we therefore have the reason to suspect that the lookouts did not take the warnings seriously, given that it was a calm night and they were in sleepy conditions during the overnight shift. It was simply beyond their imaginations that a fatal collision in maritime history would be in making!

6. The Captain and the Speed

Captain Edward J. Smith was the most senior crewman of the White Star Line. He was transferred from the Olympic to take charge of the Titanic. He had 40-year experience in navigation, with 27-year in commander level. In 1907, SS Kronprinz Wilhelm, a German liner, crashed into an iceberg but was still able to finish her voyage. No wonder Captain Smith proudly claimed in an interview in the same year that he could not “imagine any condition which would cause a ship to founder. Modern shipbuilding has gone beyond that” (Butler 1998: 48; Barczewski 2006: 13). Captain Smith was full of confidence of himself and it is not too exaggerated to say that he suffered from overconfidence bias. Overconfidence bias is an over-inflated belief in one’s skills as a leader. Accordingly, if people ever find themselves that they have everything figured out, then they will feel that they need not learn further nor put their minds into full alert. In many cases, they will easily miss out some hidden dangers. Overconfidence led Captain Smith to fail to pay proper attention to six ice warnings! Under his command, the Titanic moved near maximum speed, resulting in insufficient time to steer the ship away from icebergs. Eventually, the voyage ended in a disaster.

⁵ It is reported that Lightoller had ordered lookouts and other crew members to “keep a sharp look-out for ice, particularly small ice and growlers” (Wreck Commissioner of the United Kingdom 1912).

7. The Fatal Collision

The Titanic sailed at 22.5 knots, just 0.5 knot from her maximum speed capacity while cruising through the water which was floated with icebergs. The collision occurred at 11:40 pm on Sunday, April 14, 1912. First Officer W.M. Murdoch ordered the engines to be reversed which arguably sealed the Titanic's fate. If the Titanic maintained its speed and turned, it was more likely that she would have avoided hitting the iceberg all together. Although the damage size in the hull of the Titanic was 220 to 245 feet long, recent evidence shows that the hull had only a 12 square foot opening (approximately the size of a refrigerator), allowing water to flow into the ship. Unfortunately, the so-called "watertight" compartments of the Titanic's hull were not actually watertight. They were open at the tops, which led to her demise.⁶

8. The Structural Weakness of the Ship?

As mentioned, many ocean liners could complete their voyages in the wrecked condition after colliding with icebergs. However, the Titanic snapped and sank completely. It is argued that the production of the Titanic may be responsible for this phenomenon (Broad 1998). The gigantic size of the Titanic posed a major engineering challenge for the shipbuilder, Harland and Wolff. At that time, no shipyard had ever built a vessel of this size before. According to our theory, engineers and technicians used their stocks of knowledge to solve the problems occurred during the production of the big vessel. Since the ship of such size had never been built before, engineering and technical problems had to be solved by trial and error, and experimentation. If, during the construction process, a trial method was found to be feasible, then the

⁶ [http://www.eszlinger.com/titanic/titanfacts.html#The Titanic](http://www.eszlinger.com/titanic/titanfacts.html#The%20Titanic) retrieved on 8 May, 2012.

method would be adopted. If not, the method would be discarded and engineering teams would devise another way to tackle the problems. Furthermore, our theory depicted that most of the time, engineers would be satisfied when the new method could solve the new problem. They seldom perceived further for scenarios that might bring dangers to the ship because spending too much efforts and time on a range of possible scenarios might jeopardize the completion of the project.

Recent scientific evidences (Broad 1998; 2008) suggest that the sinking of the Titanic may be partly due to low quality rivets and ambitious shipbuilder who attempted to construct three biggest ships in the world at once, i.e. the Titanic and two sister Liners, the Olympic and the Britannic. The 46,000-ton Titanic was made of steel held together with three million rivets. They secured both beams and plates. Each rivet was made into a mushroom shape at a factory. It was heated at the work site to glowing temperatures and then inserted into the aligned holes of plates and beams. The glowing-hot end, or tail, was then hammered down to lock the parts firmly (Broad 1998; 2008).

Building three liners at the same time, Harland and Wolff was concerned over the lack of riveters and urgently called for recruitment of workers. Riveting required great skills. Iron had to be heated to a precise cherry red color and hammered by the right combination of blows. Due to the shortage of manpower, we could not expect riveting were of superior quality, if not substandard.

Moreover, building the Titanic required three million rivets that acted like glue to hold things together. The shipyard encountered shortage of rivet iron during the Titanic's construction. To solve the problem, the company ordered No. 3 iron bar, known as "best quality" but not No. 4 iron bar, known as "best-best quality", which was used for anchors, chains and rivets by most shipbuilders (Broad 1998; 2008).

Rivets are made of wrought iron which contains some slag. Slag is largely

composed of silicon which is the main ingredient of rock, sand and glass. Pure iron is very ductile and bending easily without breaking. It will be strengthened by adding some slag. If slag is finely and evenly distributed in long microscopic threads, wrought iron will be made at high quality. Otherwise, excessive slag makes iron brittle. Studies (Foecke 1998; Hooper and Foecke 2008) reveal that many rivets in the Titanic were found to be substandard. They were mixed with high concentrations of slag which made rivets brittle and were prone to fracture. In 1997, Dr. Timothy Foecke, a specialist in metal fracture at the National Institute of Standards and Technology, analyzed two salvaged rivets and discovered that they contained about three times more slag than in modern wrought iron. He disclosed 9.3 percent slag in one rivet and similar level in the other. By contrast, modern wrought iron has 2 percent or 3 percent of slag content (Foecke 1998; Broad 1998; 2008). To be fair, we need to find out if this slag level acceptable in the Titanic's time. Foecke (1998) finds that in 1906, slag content of wrought iron was from 2 percent to 2.5 percent, much lower than the Titanic's rivets. Furthermore, the slag of rivets in the Titanic was very coarsely distributed, resulting weak panels for the ship. More surprisingly, its grain changed abruptly just before the area where the ends popped off, turning perpendicular to the axis grain and suggesting an area of major weakness (Broad 1998; 2008).

During late 19th century, some shipbuilders moved from iron to steel rivets which were more superior. Harland and Wolff only used steel rivets on the Titanic's central hull where stresses were expected to be the greatest. Iron rivets were still used for the stern and bow. In this way, it could save costs. Scientific evidences suggest that better rivets would have probably kept the Titanic afloat long enough for rescuers to arrive to save lives (Broad 1998; 2008).

Our theory iterates one important point. The Titanic was the largest ship ever

built. Hence, the project should be treated differently in terms of safety and precautions. Unfortunately, the shipbuilder stretched to the limit as it struggled to build all three biggest ships simultaneously. Harland-Wolff compromised safety for completion deadline. Based on their previous experiences and technology, engineers in the shipyard and owners of the ship company were unable to foresee that little deficiency in rivet quality could mean a lot in collision. Regrettably, such compromise could not be easily disclosed by the outsiders, not even by the British public officials.

8.1 Lifeboats underprovided?

Lifeboats can be regarded as redundancy if everything goes well. However, the function of lifeboats is a precautionary backup against unexpected incidents such as fire or collision, just like a car carrying a spare tyre (Alchian and Allen 1983: 89). It is reported that the regulations on the number of lifeboats that ships required to carry were outdated and inadequate. The Titanic had a total of 20 lifeboats, comprising 16 wooden boats on davits, 8 on either side of the ship, and 4 collapsible boats with wooden bottoms and canvas sides. On average, each lifeboat could take up to 68 people (Hutchings and de Kerbrech 2011: 112). Altogether they could accommodate 1,178 people, near half the amount of people on the Titanic. The shortage of lifeboats was not because of lacking space⁷, nor of cost consideration. Rather, the White Star Line Company preferred to have the deck with grand views of the sea, which would have been blocked by installing more lifeboats (Marshall 1912:141).

More importantly, senior management team of the company committed a serious error due to mental inertia. They never thought that all crew and passengers would have to be evacuated at the same time as the Titanic was considered unsinkable. In their views, lifeboats were intended to be used for transferring passengers off the ship

⁷ The Titanic had been designed to accommodate up to 68 lifeboats.

and onto a nearby vessel in case of an emergency (Hutchings and de Kerbrech 2011: 116). It was a common practice for ocean liners to have lifeboats less than the quantity required to load all passengers in a sea disaster (Lord 1987: 84), implying that people would never expect the ship would sink completely in such a short time. They took their past experiences for granted. No wonder it is easier to remove a tooth than abolishing an old concept, as saying goes!

9. **The Rescuing Process in Chaos**

The rescuing process was reported to be in chaos. The reason is not hard to understand. There was never crisis prevention or rescuing rehearsal conducted before the Titanic's voyage. With glorious past and pride, the Captain was full of confidence of himself. He took things easy for he never imagined that a fatal collision would happen to his ship. As the situation got worse, Captain Smith showed nervousness and appeared to be indecisive (Butler 1998: 250–2). He did not issue a full call for evacuation nor order his officers to load the lifeboats. He did not adequately organize the crew. He withheld crucial information from his officers and crewmen and gave ambiguous and impractical orders. Even some of bridge officers were unaware for some time that the ship was sinking. Fourth Officer Joseph Boxhall did not know the news until 01:15, less than an hour before the ship went down (Butler 1998: 250-2). Quartermaster George Rowe was so unaware of the emergency that after the evacuation had started, he phoned the bridge from his watch station to ask why he had just seen a lifeboat passed by (Bartlett 2011: 106). Smith did not inform his officers that the ship did not have enough lifeboats to save everyone. He did not supervise the loading of the lifeboats and seemingly made no effort to find out if his orders were being followed. In short, Captain Smith entirely lost control in this chaotic situation.

9.1 The evacuation

Conventional practice cannot be fully taken because unexpected event can occur anytime in the uncertain future. Like other vessels of her time, the Titanic did not have permanent crews but the vast majority of crew members were casual workers. This is a poor conventional practice. The crew were unprepared for the emergency as lifeboat training had been minimal. Only one lifeboat drill, an exercise conducted by the crewmen, had been carried out a trial run while the ship was parked in the dockyard. No lifeboat or fire drills had been rehearsed since the Titanic left Southampton (Mowbray 1912: 279). A lifeboat drill was originally scheduled in the morning before the ship sank but was cancelled for unknown reasons by Captain Smith.

Notices were posted on the ship assigning crew members to particular lifeboat stations, but few appeared to have read them or to have known what they were supposed to do. Most of the crew were not professional seamen. Some of them even had no prior experience of rowing a boat. They were encountered with the complex task of coordinating the lowering of 20 boats with a total load of 1,100 people, 21 meters down to the water (Bartlett 2011: 123).

Thomas E. Bonsall, a historian, comments that the evacuation was so poorly organized that “even if they had the [enough] lifeboats they needed, it is impossible to see how they could have launched them given the lack of time and poor leadership”. For instance, 40 minutes after the collision, Captain Smith ordered to put “women and children [into the lifeboats] and lower away” (Cox 1999: 52). However, two officers Lightoller and Murdoch interpreted the order differently. Murdoch took it to put women and children first while Lightoller thought it meant women and children only. Lightoller lowered lifeboats with empty seats if there were no women and children waiting to board. Murdoch allowed men to board if women and children had

embarked. Neither officer knew how many people could safely be carried in the boats. If each lifeboat is filled in its maximum capacity of 68 people, an extra 500 people could have been saved. Instead, hundreds of people, mostly men, were left on board while lifeboats were lowered with many seats empty (Barczewski 2006: 21). This event fully illustrates communication and coordination failures.

10. Passengers Take it Easy!

The Titanic was a luxurious cruise. Therefore, it was reasonable for the ship company and management team of the ship not to emphasize on the possibility of maritime accidents to the customers. Precautionary or safety warnings would not unduly be delivered to holiday passengers. As a result, passengers in the Titanic never perceived that the unsinkable titanic could sink. Hence, it is not surprised that many passengers and crew were reluctant to comply with evacuation orders as the accident broke out. They refused to believe that there was a problem and preferred to stay inside the warm chambers of the ship to the bitterly cold outdoor. Many passengers did not know that the ship was sinking, though a few felt that the ship was tilted. Around 00:15, the stewards began to order the passengers to put on their lifebelts. Many passengers treated the order as a joke (Barczewski 2006:20). Some people even played soccer with blocks of ice scattered across the front deck. The officers in charge found it hard to persuade passengers to evacuate. A millionaire on board even claimed, "we are safer here than in that little boat" (Lord 1976: 73-4). Some passengers utterly refused to embark. Such behavior was fully consistent to the oriental saying that, "one would not know the danger until eyebrows submerged". At 2:18am, April 15, 1912, the Titanic snapped in half and sank two minutes later.

11. Lessons to be Learnt: Past Success Can Lead to a Disaster Today!

Mental inertia and judgmental failure in one separate incident may not be fatal. However, when these failures occur in all units within the organization at the same time, result can be devastating. It is this reason that the Titanic cruised into a fatal voyage. The Titanic disaster serves as a good lesson for senior management people of our time. Success and failure of a voyage, if viewed as knowledge problems, are manifested in the unexpected change.⁸ Our theory suggests that a successful voyage yesterday can be a disastrous one for today. Likewise, a failure today can be a good lesson for tomorrow. So yesterday's successful experience should not be fully taken as today's guideline. If we take previous successes as an ultimate end, this will limit our willingness to change (Farson and Keyes 2002: 32). Errors of yesterday arouse our alertness and force us to re-examine our way of thinking. Errors allow us to shed new insight on the situation. Too much success in the past can lead to potential disaster because past glory will be excessively taken. As a result, the members of an organization may not want to change any policy even when external condition changes drastically. In the Titanic case, blind faith in the authority and leadership and overconfidence in advanced technology caused the ship to sink. The Titanic, 'the Ship of Dreams' with her eternal youth and beauty, sleeps forever under the ocean, serving as a "monument and warning to human presumption".

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⁸ In Hayek's view (1945), if changes are expected, events are then fully anticipated, there will be no coordination problem.

References

- Alchian, A.A. and W.R. Allen (1983) *Exchange and Production*, 3rd. edition, Belmont, CA: Wadsworth Publishing Co.
- Barczewski, Stephanie (2006) *Titanic: A Night Remembered*. London: Continuum International Publishing Group.
- Bartlett, W.B. (2011) *Titanic: 9 Hours to Hell, the Survivors' Story*. Stroud, Gloucestershire: Amberley Publishing.
- Bassett, Vicki (1998) "Causes and Effects of the Rapid Sinking of the Titanic", working paper, Department of Mechanical Engineering, the University of Wisconsin, <http://www.writing.eng.vt.edu/uer/bassett.html#authorinfo>, retrieved on 20 April, 2012.
- Battles, James B. (2001) "Disaster prevention: lessons learned from the Titanic," *Baylor University Medical Center (MUMC) Proceedings*, 14:150–153.
- Broad, W.J. (1998, January 27) "Faulty Rivets Emerge as Clues To Titanic Disaster", *The New York Times*.
- Broad, W.J. (2008, April 15) "In Weak Rivets, a Possible Key to Titanic's Doom". *The New York Times*.
- Butler, Daniel Allen (1998) *Unsinkable: The Full Story of RMS Titanic*. Mechanicsburg, PA: Stackpole Books.
- Choi, Y.B. (1997) 'Conventions and Learning: A Perspective on the Market Process', Paper presented at the Conference to Celebrate Brian Loasby's Work at Stirling University 1967-1997, organised by Sheila Dow and Peter Earl held at the Management Centre, Sterling University, 26-28 August 1997.
- Choi, Y.B. (1999) 'Conventions and Economic Change: A Contribution Toward a Theory of Political Economy', *Constitutional Political Economy*, 10(3): 245-64, October.
- Cox, Stephen (1999) *The Titanic Story: Hard Choices, Dangerous Decisions*. Chicago: Open Court Publishing.
- deBono, Edward (1992) *Serious Creativity*, New York, NY: Harper Business.

- Encyclopedia Britannica* (2012) <http://www.britannica.com/titanic/article-302520>; retrieved 8 May 2012.
- Farson, R. and Keyes, R. (2002) *Whoever Makes the Most Mistakes Wins: The Paradox of Innovation*, New York, NY: The Free Press.
- Foecke, Tim (1998) *Metallurgy of the RMS Titanic*, Metallurgy Division, National Institute of Standards and Technology, U.S. Department Of Commerce, NIST-IR 6118.
- Frey, B., D.A. Savage and B. Trogler (2011) "Who Perished on the Titanic? The Importance of Social Norms." *Rationality and Society*, 23(1) 35–49.
- Gill, Anton (2010) *Titanic : The Real Story of The Construction of The World's Most Famous Ship*. London: Channel 4 (imprint of the Random House).
- Godkin, L and S. Allcorn, (2008) "Overcoming Organizational Inertia: A Tripartite Model for Achieving Strategic Organizational Change", *Journal of Applied Business and Economics*, 8(1):82-95.
- Hall, Wayne (1986) "Social Class and Survival on The S.S. Titanic", *Social Science and Medicine*, 22 (6): 687-690.
- Hayek (1945) "The Use of Knowledge in Society", *American Economic Review*, XXXV(4), September, 519-30, reprinted in *Individualism and Economic Order*, 1949, London: Routledge, pp.77-91.
- Hooper, Jennifer and Tim Foecke (2008) *What Really Sank the Titanic: New Forensic Discoveries Reviews*, New York : Citadel Press.
- Hutchings, David F. and de Kerbrech, Richard P. (2011) *RMS Titanic 1909–12 (Olympic Class): Owners' Workshop Manual*. Sparkford, Yeovil: Haynes.
- Kelly, Dawn and Terry L Amburgey (1991) "Organizational inertia and momentum: A dynamic model of strategic change." *Academy of Management Journal*, 34: 591-612.
- Langlois, Richard N. and Paul L. Robertson (1995) *Firms, Markets and Economic Change: A Dynamic Theory of Business Institutions*, London: Routledge.

- Leibenstein, Harvey (1976) *Beyond Economic Man*. Cambridge: Harvard University Press.
- Lord, Walter (1976) *A Night to Remember*. London: Penguin Books.
- Lord, Walter (1987) *The Night Lives On*. London: Penguin Books.
- Maltin, Tim (2012) "Did the Titanic Sink Because of an Optical Illusion?" *Smithsonian Magazine*, March issue.
- Marriott, P.B. (1992) "RMS Titanic Reappraisal of Evidence Relating to SS Californian," Marine Accident Investigation Branch, Department of Transport, Southampton.
- Marshall, Logan (1912) *Sinking of the Titanic and Great Sea Disasters*. Philadelphia: The John C. Winston Co.
- Mowbray, Jay Henry (1912). *Sinking of the Titanic*. Harrisburg, PA: The Minter Company.
- Portland Oregonian* (1912, April 27) "Portland Woman Describes Wreck", <http://www.encyclopedia-titanica.org/portland-woman-describes-wreck.html>; retrieved on 22 May 2012.
- Reason J. (1990) *Human Error*. Cambridge: Cambridge University Press.
- Ryan, Paul (1985/86) "Titanic Tale", *Oceanus*, Woods Hole, MA: Woods Hole Oceanographic Institution, 28(4): 6-15, winter.
- Schutz, A. (1970) *On Phenomenology and Social Relations*, Chicago: The University of Chicago Press.
- The Telegraph* (2012, May 8) <http://www.telegraph.co.uk/news/uknews/1561604/Key-that-could-have-saved-the-Titanic.html>, retrieved on 8 May 2012.
- The United States Senate Inquiry Report* (1912) "Titanic Disaster: Hearings Before a Subcommittee of the Committee on Commerce United States Senate." 2nd Session of 62nd Congress, Pursuant to S. Res. 283 Directing the Committee on Commerce to Investigate the Causes Leading to the Wreck of the White Star Liner "Titanic. Oradell, NJ: Pawprint Books.
- WebTitanic (2010, November 12) <http://www.webtitanic.net/>; retrieved on 30 April, 2012.
- Weick, K.E. (1969) *The Social Psychology of Organizing*, Reading, MA: Addison-Wesley.

Weick, K.E. (1995) *Sensemaking in Organizations*, Thousand Oaks: Sage.

Weick, K.E. and R.E. Quinn (1999) "Organizational Change and Development", *Annual Review of Psychology*, 50: 361-388.

Wreck Commissioner of the United Kingdom (1912) "British Wreck Commissioner's Inquiry: On a Formal Investigation Ordered by the Board of Trade into the Loss of the S.S. Titanic." (<http://www.mytitanic.co.uk/inquiry/britain/day03.php>; retrieved on 14 May 2012).

The World Almanac and Book of Facts 2008: 140th Anniversary Edition. New York, NY: World Almanac Education Group Inc., 2008.

Yu, Fu-Lai Tony (2011) *New Perspectives on Economic Development: A Human Agency Approach*, Wageningen, The Netherlands: Wageningen Academic Publishers.