

§ 6 The Psychology behind Risky Behaviour

The ratio by type of cause of total accidents as accumulated over the last five years

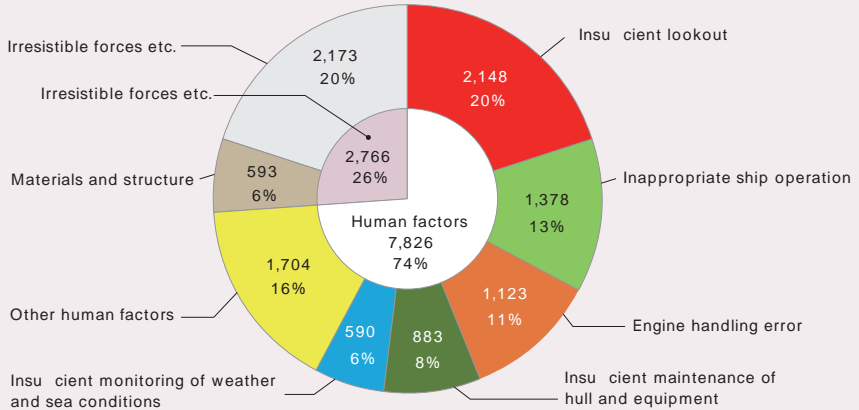


Figure 42 Japan Coast Guard Causes behind accidents

According to a guidebook called “Facts and countermeasures against maritime accidents in 2017 (provisional translation)” issued by the Japan Coast Guard, almost 75% of all maritime accidents are said to be fundamentally caused by human error.

Looking at the chart in Figure 42, Irresistible forces are counted as accident causes, however, on analysing the original cause behind them, we can see that almost all are caused by human error. Thus, 90% of all maritime accidents can be regarded as acts of human error.

As can be seen in the Figure 44, human errors can be mainly classified into the



Figure 43 An example of human error

following 4 causes: experience, environment and work content, communication and human beings.

In this classification, regarding the human errors caused by experience, environment and work content, and communication they can be prevented relatively easily.

However, for many of those which were caused by a human being, it is difficult to take preventive measures. Depending on the individual situation, what may be considered normal is constantly changing, even when it may be the same person.

In addition, if one tries to forcibly eliminate any of these human causes, psychological reactance, psychology of normalcy bias and/or confirmation bias will come into play (discussed in closer detail below), which may make the situation even worse.

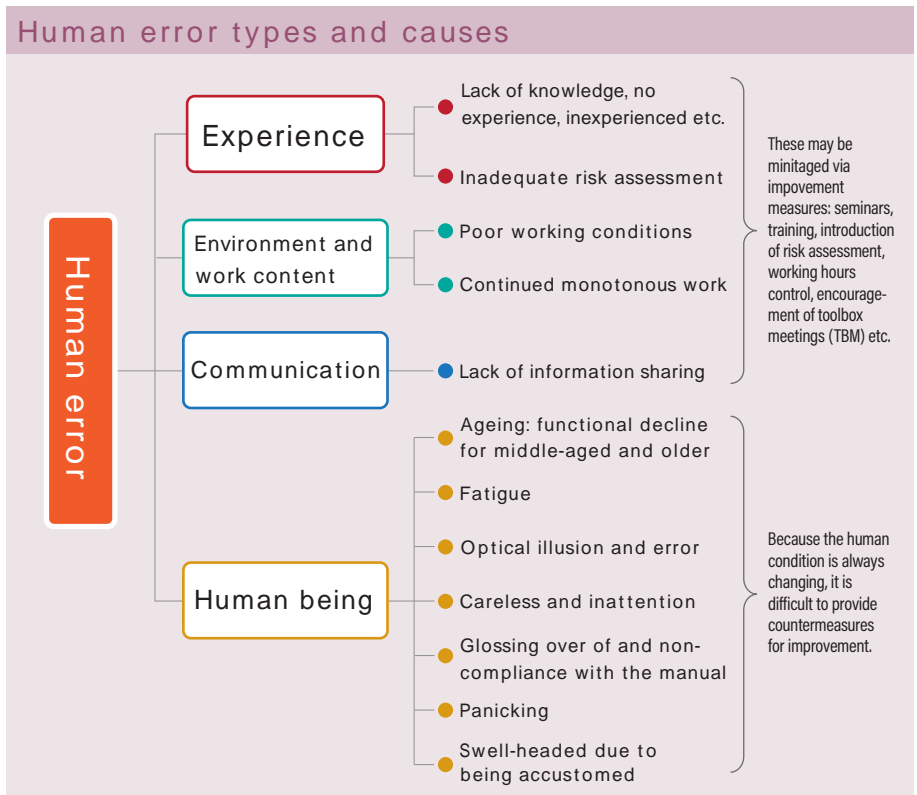


Figure 44 Human error types and causes

The lecturer considered the ramifications on board a ship as a result of psychologically unsafe behaviour. The following 5 items are the most dangerous, he notes. Let us examine an Approach to Safety Behaviour from the perspective of psychology.

- | | |
|-------|---------------------------------------|
| No. 1 | “ Someone will do it for me ” |
| No. 2 | “ Stop exaggerating! ” |
| No. 3 | “ I m special, nothing can hurt me! ” |
| No. 4 | “ What will the neighbours think? ” |
| No. 5 | “ I won t do what you tell me ” |

6 - 1 Psychological reactance(self-e cacy)

No. 5 “ I won't do what you tell me ”

When being told, “Behave yourself” by your colleagues or “Just do it!” by a family member, we tend to act repulsively, saying “I won’t do what you tell me”. These scenarios are remnant of Psychological reactance.

Although someone wants to do more if he or she is told not to do so, conversely, if he or she feels restricted or has been ordered to do something or not to do something, that person would feel a loss of self-efficacy.

Because a mechanism to recover this self-efficacy starts working concurrently in our mind; simply put, if you are told to do something, you will not want to do it, and conversely, if you are told to stop doing something, you will want to do it. If there was a hole in a wall at a construction site, and it is the same height as your line of sight, and there was a note above it saying “Do not peep through this hole!”, you would probably want to look through the hole. Also, if there was a sign board saying “No passage”, we probably want to use it.

This is typical psychological behaviour based on instinct which is the guiding principle

of human beings: I want to decide and take action by myself. This mechanism is referred to as self-efficacy recovery and/or psychological reactance. Human beings want to be free originally and do not want to act restricted by anyone. This psychological reactance is highly likely to manifest when being told that you can or cannot do something by someone who is close to you, on the precondition that the situation and its frequency (depriving your freedom) are closely related. This psychological reactance is less likely to manifest between a supervisor and his/her subordinate, but is more likely to manifest between colleagues or family members. Figure 45 shows a diagram of these relationships.

Seafarer is an occupation whereby such psychological reactance is prone to manifest due to the following:

High degree of freedom with limited involvement of the manager.

Strong confidence and self-consciousness due to a higher education and licenses held.

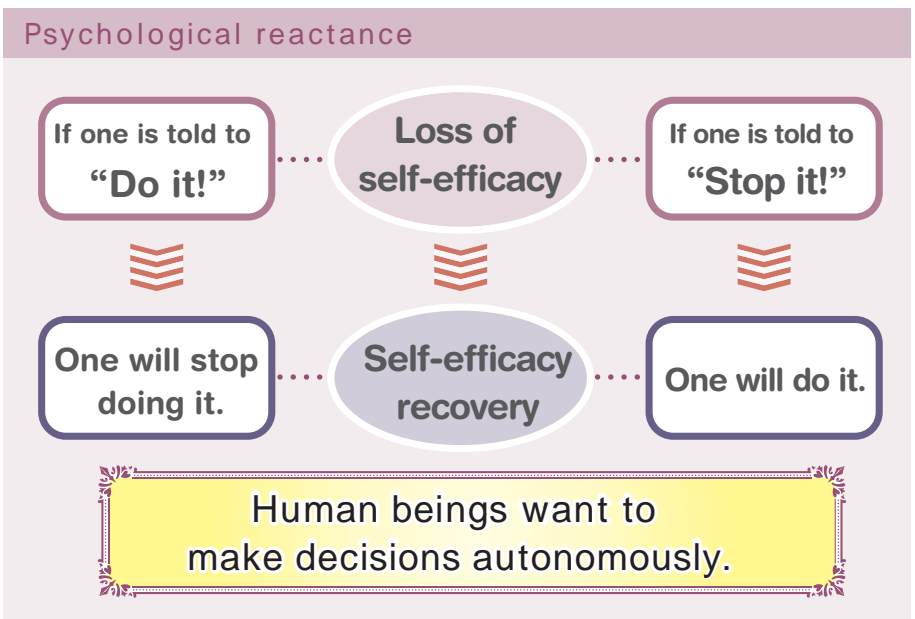


Figure 45 Psychological reactance

For instance, when a person in charge on the ground telephones the Master in the vessel requesting work to be done during a meeting in the office, most of you might have received a reply such as “How many years have I been operating this vessel?” or “Do you know how many years I have been operating as a Master?”

This is also a form of psychological reactance and it occurs because the Master’s mechanism of self-efficacy recovery is active. It will be important to explain this if you have the chance to, because you may be able to avoid an emotional conflict, if both the crew and the person in charge on land are aware of such a psychological mechanism.

6 - 2 Entrainment and Peer Pressure: No. 4 “ What will the neighbours think? ”

Human beings are prone to make a judgement or decision influenced by somebody else’s ideas and thoughts. This is known as the entrainment phenomenon. This is because of our DNA that has stayed with us since ancient times. It tells us we may starve to death if we were to move apart from the group. This DNA still remains

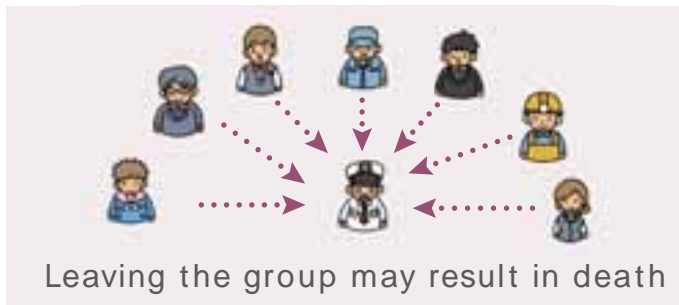


Figure 46 Entrainment phenomenon

In “2-2 Why psychology is needed”, the lecturer explained to the fishermen why he

needed to put on a life jacket, including revisions to the law etc. The reason why life jacket usage has declined is probably because of this entrainment phenomenon.

Next, let's take a look at what happens with a group of zebras. Imagine that a herd of one hundred zebras sensed a lion's presence.

Even if 30 zebras (30%) ran away, as soon as the lion disappears, they will regroup again which ends up being a transient form of entrainment. (Figure 47)



Figure 47 Entrainment phenomenon

To the contrary, in the case that 70 zebras (70%) run away, because of transient entrainment they will all dissipate and will not regroup. Even after the lion disappears, they will never come back again and the group will have disappeared. (Figure 48)



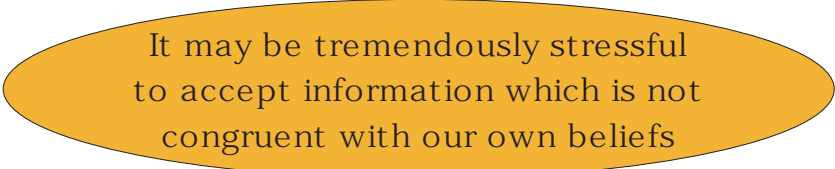
Figure 48 Entrainment phenomenon

From the above, it is suggested that educational effect cannot be achieved if it does not exceed 70%.

6 - 3 Normalcy Bias :
No. 3 “ I m special, nothing can hurt me! ”
(Justification, cognitive dissonance)

Human beings have the characteristic to underestimate or ignore information that is inconvenient for him or her. Also, we ignore negative information and underestimate phenomena saying “I’m special, nothing can hurt me!” As a result of this, they missed the chance to escape even though they knew that a disaster was imminent. This is known as Normalcy Bias, justification or cognitive dissonance. For example, how do you react when the fire alarm suddenly sounds where you are situated? It is often seen in many experiments, where no one moves, which is exactly the same as “I’m special, nothing can hurt me!”

Normalcy Bias makes us feel that such inconvenient information is stressful. Thus, we ignore it in order to avoid stress and underestimate the phenona saying, “I’m special, nothing can hurt me!”, which may end up with running out of time to escape.



It may be tremendously stressful
to accept information which is not
congruent with our own beliefs

Figure 49 Normalcy Bias

For example, the following news is often broadcast, such as, “Despite the large-sized tsunami warning, he became a victim by not evacuating, but instead dropped by to check the sea shore.”

The News reported that “Despite the fact that an evacuation was urged, the person did not evacuate and went to see the flooded river, to then get washed away.”, “The person

was taking a picture and did not evacuate despite the volcanic fumes coming from Mt. Ontake following the eruption.” and so on. This is all because of the psychology, Normalcy Bias and “I’m special, nothing can hurt me!”

It is important to take the initiative on safety behaviour and it is necessary to eliminate a climate that criticizes or underestimates the people who are taking positive steps.



Figure 50 Mt. Ontake Eruption

Peer Pressure and Normalcy Bias

Although this is applicable to all companies of any industry sector, when Peer Pressure and Normalcy Bias that were explained in 6-2 are combined, especially in the transportation and manufacturing sectors, it may cause a serious accident.

In other words, if the employees choose to ignore inconvenient information and, even worse, if all members of the company are synchronized with one another, the safety margin will shrink as they neglect to follow the safety standards which they had complied with in the past, thinking “It would be acceptable to deviate to this extent.” If repeated, their recognition of the deviation will fade and then disappear as the once deviated activity becomes the “standard”.

Taking into consideration the environment and human error, there are many cases where safety may be secured by setting the safety standard (rate) generously at 150% or 200%. However, for whatever reason, (i.e. cost reduction etc.), it may be tempting to think “It’s probably acceptable if we decrease it by..say only 5%,” which the organization may

allow. However, this will bring about a reduction in the safety margin. It is problematic if such psychological biases as “There is safety in numbers,” and “Everything was fine yesterday, so surely everything will be fine tomorrow,” become commonplace within an organization.

This kind of situation helps increase the degree of risk, and as it is repeated, the safety standard drops to 100%. Then, once accepted minor unsafe acts and environmental changes in the activity field (explained in 5-2 A Model of Safety as an International Standard) are present the probability of an accident suddenly occurring increases.

In the manufacturing industry, it would mean the tacit consent of product quality degradation, or in the shipping industry, it would mean deviating from or making a sham of the safety management code and SMS manual. Therefore, the realization that “deviations” and “errors” cannot be avoided, and that safety management based on the fact that “Human beings sometimes make mistakes” is required.

6 - 4 Confirmation bias: No. 2 “ Stop exaggerating! ”

People are unconsciously prone to believe only “what they want to believe” and “information that supports what they believe” rather than purposefully seeking information to the contrary. In addition, when investigating two conflicting opinions, there is a tendency to set a high value on affirmative information, and disvalue or even take no notice of negative information. This is called Confirmation bias.

As a person obsessively collects convenient information that is in line with what he/she believes to be correct, his/her bias and assumptions are reinforced; with a lack of objectiveness, there is a risk that they may be overlooking correct information.

This is a true story in the U.S., even though it is commonly said that a bid for an oil-

exploitation right will always make a deficit. The reason is that the bidder collects convenient biased information on “an oil field with 10 billion barrels”. Even in the face of negative information, such as, the oil field is already in depletion or others have pulled out, he or she will still say “OK, I can definitely exploit this,” and bids for 10 billion US dollars in vain. This is said to be a trap for confirmation bias.

When the lecturer asked a Master who had experienced anchorage in the typhoon last year, he received an answer along with the confirmation bias: "There was information about the typhoon available every second regarding the changing course of the typhoon, and he opted for route information which would put the most distance between his vessel and the typhoon, further believing it would be all right because his safe haven as well as anchorage had been located at the same place in the past."

Also, there are criminals who carry out remittance fraud by sneakily using confirmation bias. Posing as a banker, civil servant or business person working for a first-class company, they begin with a sweet story (i.e. they explain that a refund is to be paid), and cheat the victim into going to an ATM to transmit funds. If one is thinking in a level-headed manner, it is obvious that a refund does not require any funds being remitted. However, they get away with cheating people in this way by capitalizing on the psychology of confirmation bias.

It is always necessary to have a certain amount of scepticism, no matter how desirable the information, situation or directions may be.

6 - 5 Social loafing: No.1 “ Someone will do it for me ”

When human beings work with a large number of people, they sometimes take the easy option. This is called “Social loafing” in psychology.

For example, when playing tug-of-war, an experiment verifies that people reduce their strength to half, if the total number of team members is increased from 3 to 5.



Figure 51 Social loafing

The reason behind this is that our sense of responsibility is reduced when we feel that a proportion of our workload has been taken care of. In addition, because there is a large number of people with him or her, their anxiety to be evaluated decreases. In order to not cause Social loafing, it is necessary to “ **clarify the workload and evaluation criteria of each person** ”.

When the lecturer was engaged at PSC, he had an internal audit, periodically. The PSC team consisted of three inspectors and two had already examined the engine room. When the lecture was alone, he found a leak from one of the steam pipes. As the leakage was a large amount, he assumed this had been pointed out by one of the other two inspectors without a doubt and did not record leakage in Form B (points to be noted).

The lecturer was taken to task for why he did not record it regardless of the fact that he was aware of the problem, by the audit in the meeting following the inspection. He

answered that because another two careful inspectors had passed the point in question, he assumed that the pipe had already been recorded in their report, so he was involved in social loafing, completely.

The following is a case which inspired the theory of Diffusion of Responsibility in psychology.

= Murder of Kitty Genovese = From Wikipedia

The murder of Kitty Genovese is a murder that took place in Kew Gardens, Queens in New York US on March 13 1964.

Ms. Catherine Genovese, Kitty, who lived in this vicinity, was on her way home when she was killed by villain Winston Moseley near the Kew Gardens station. The New York Times publicized that even though Catherine screamed loudly for help, none of her neighbours called the police for her. This incident triggered a bystander effect.

When Kitty was walking home, Moseley stabbed her in the back with a knife. As soon as Kitty screamed, a light went on in the window of a nearby apartment. The dweller opened the window and shouted to everyone to keep their distance from Kitty.

Moseley looked up at the inhabitant, gave a shrug and walked back to his car leaving Kitty. But, once the window light was out, Moseley came back to where Kitty was, she was going back to her room, and stabbed her again.

When Kitty screamed once again,



Figure 52 Catherine (Kitty) Genovese

the light went on in the same building. Moseley left the scene in his car. However, he went back to Kitty and then stabbed her fatally in the neck. Later, the gentleman who lived in the same apartment reported it to the police, but it was too late as Kitty was already dead. Six days after the accident, Moseley was arrested and accused. Following the result of the first trial, the murderer got a death sentence, but after an appeal he got life in prison at the second trial. Moseley seemed to understand the bystander effect, as the perpetrator had already committed a similar offence before. Regarding the reason as to why he did not leave in spite of being

watched by the inhabitants at such an early stage, Moseley confessed that everything went according to plan, and that the witness would shut the window immediately and go to bed.

In 2015, the documentary film "Silent Witness" had a scene where Kitty's younger brother interviewed the witnesses at that time. Among the 38 witnesses, there were those who heard

a voice but could not see anything, those who saw Kitty walking without seeing the criminal, and those who said they were going to report it to the police but were told that it had already been reported (there was no record at the police station), and so on. This was a case of "Someone will do it for me" but by an entire neighbourhood.

The following is required in order to solve such problems caused by social loafing.

In order to carry out the purpose, it is necessary to improve the conditions and environmental equipment adequate for each person to do the best with their initiative.

So far, we have been discussing unsafe acts and psychology. The level of safety will improve more with better knowledge of our own psychological features, observing ourselves more as well as our ordinary lives and being conscious that these psychological factors come into play. There are "12 Human characteristics which everyone has" and these were introduced in the Loss Prevention Bulletin No. 35 "Thinking Safety".

Twelve human characteristics

Human beings sometimes make mistakes

Human beings are sometimes in a hurry

Human beings are sometimes careless

Human beings sometimes become emotional

Human beings sometimes forget

Human beings sometimes make assumptions

Human beings sometimes do not notice

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Human beings are sometimes lazy

Human beings have moments of inattention

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Human beings sometimes panic

Human beings sometimes are sometimes only able to see or think about one thing at a time

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Human beings sometimes transgress when no one is looking

Figure 53 Twelve human characteristics