

Traffic Light Decision Making

A simple model to evaluate dangers and guide safe decision-making in Outdoor Adventure experiences

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Abstract

Over the years, one of the biggest challenges facing teachers of outdoor education is finding a way to help students develop their own judgment and ability to make safe decisions during their adventure experiences. Many theoretical models in the literature are very technical and cumbersome and are impractical in the field for most students. This article outlines a simple model that teachers of outdoor education can use to help mentor students in the art of safe decision making. Pros and cons for the model are outlined, along with transfer application to other areas of student's lives.

Introduction

During my tertiary training in Canada, a group of my fellow students and I, set off on our final expedition before graduating. We had chosen, Mt. Sir Sandford, a peak in the Northern Selkirk Mountains of British Columbia. For a week we camped at the base of the mountain in glorious autumn weather, training for the ascent, and planning our route up the enormous ice face. The night before our summit bid we were hit by the first storm of the winter season, it battered us for several days dumping a metre of snow on the hard blue ice of Sir Sandford Glacier. With the storm abating, tension developed within the group with two separate parties forming. One wanted to continue with plans to climb the mountain the other wanted to evacuate the isolated valley before the winter snows blocked our escape route, over the passes we had to negotiate to get out to safety.

With this dichotomous friction within the group, relationships, and the ability of the group to come up with a safe rational decision about what to do was somewhat inhibited. To aid our impasse, our lecturer suggested a decision making process that not only provided opportunities to look at the pros and cons of both parties options, but enabled us to systematically evaluate the dangers that we would encounter with each option. From here the group was able to come up with a satisfactory consensus, and implement a plan of evacuation, that was the safest and best choice at the time.

For many years this expedition into the Northern Selkirks sat dormant and little more than a distant memory, until my work began with year 9 students. I found I required a teaching tool to help mentor these young outdoor expeditioners develop sound decision making about their own safety when travelling

in the field. The “Traffic Light Decision Making Model” has evolved with these students in mind, but I believe it could be a useful tool for all outdoor practitioners to, 1) Help them make safer decisions in the field, and 2) Use as a teaching tool, to help mentor students in the development of their own judgement and safe decision making skills.

Overview of Existing Decision Making Models

There has been several attempts by authors to develop models that explain the steps one should go through when assessing dangers and the amount of risk involved in adventurous activities. (Brown, 1993:1998; Ewert, 1983; March, 1986; Priest, 1996). I will leave it up to you to pursue the finer details of these papers, however all these models have one thing in common. They eventually lead the practitioner into a situation where at some stage one is required to make a decision about the dangers you are assessing, and need to decide whether to remove, avoid, or accept the dangers present. This process can be seen below in figure 1: Priest’s (1996) “10 Steps to Danger Analysis Model”.

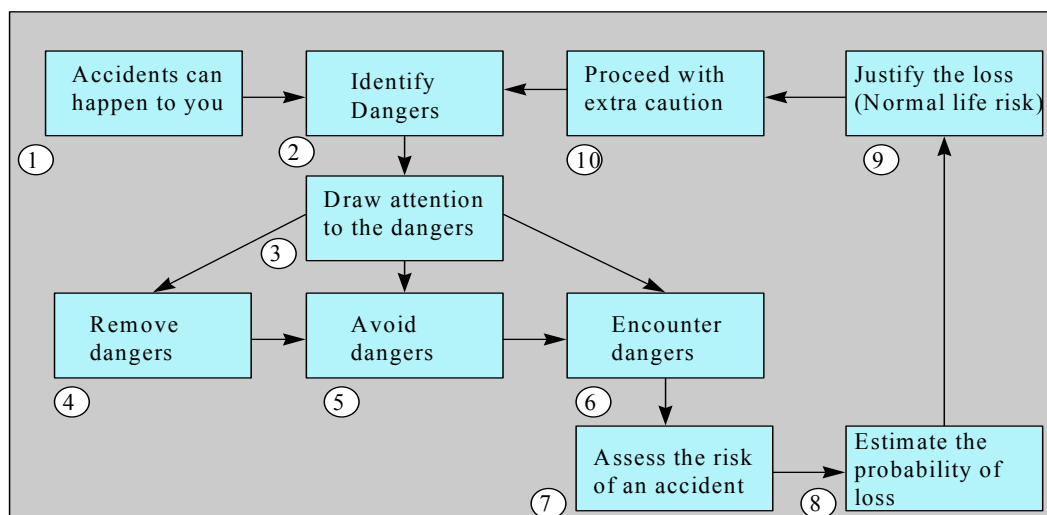


Figure 1. 10 Step Danger Analysis Model (Adapted from Priest, 1996).

While these models go a long way in providing a framework for understanding the complex processes of assessing dangers in the outdoors, they could be improved with the addition of a tool to help make the decision making process more concrete. This is where the “Traffic Light Decision Making Model” comes in. Figure 2 below shows the inclusion of the Traffic Light filter, which is designed to help strengthen the process participants go through when assessing dangers, and making decisions on safety. The traffic light process gives

students objective criteria with which to make an assessment as to whether on should remove, avoid, or accept the dangers they have encountered.

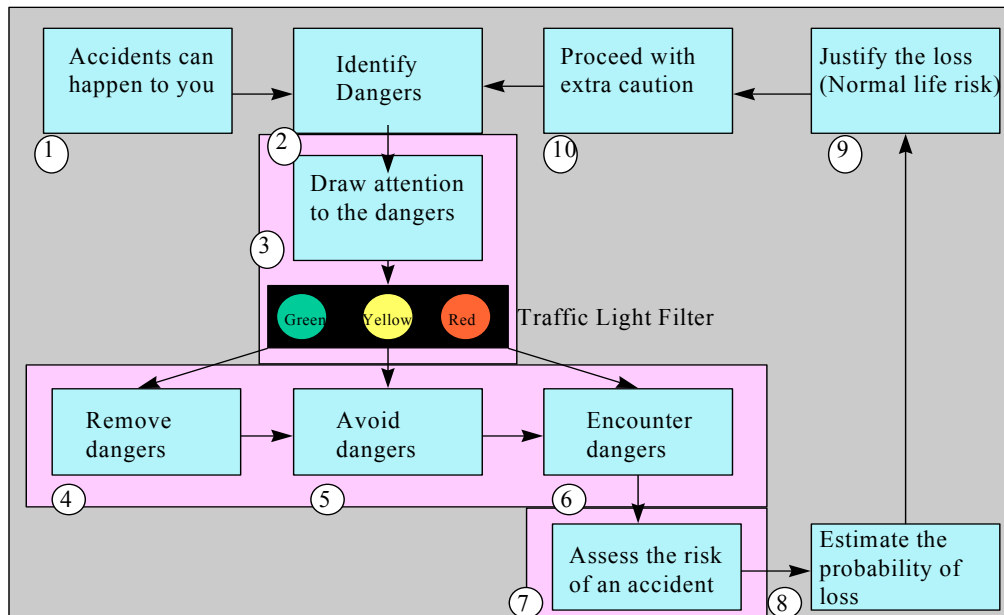


Figure 2. Priest's (1996) 10 step Model with "Traffic Light Filter" inserted to help guide decision making.

The Traffic Light Decision Making Model

The model is based on the red, yellow, and green lights of a traffic signal, something concrete and highly recognisable in populations and cultures of all ages; it can be used by leaders when on an outdoor adventure to mentor their student's in safe decision making. Often, leaders in the field lack a process to educate those in their party about the process of making safe decisions. Leaders have developed their judgment from years of training and experience, however this learning can be shared with those under their care. The traffic light model can help this mentoring process. Figure 3 outlines the models main features. Also illustrated in italics is a short rhyme corresponding to each colour of the traffic light model. This maybe useful in helping younger students use and understand the workings of and implications of the decisions they are making. "If its red you could be dead," demonstrates clearly the implications of a red light situation. "If its yellow we need to mellow," indicates the need to stop, and conduct an effective evaluation to determine safer options. "If its green lets get keen," gives a picture that all is safe and okay to proceed with enthusiasm.

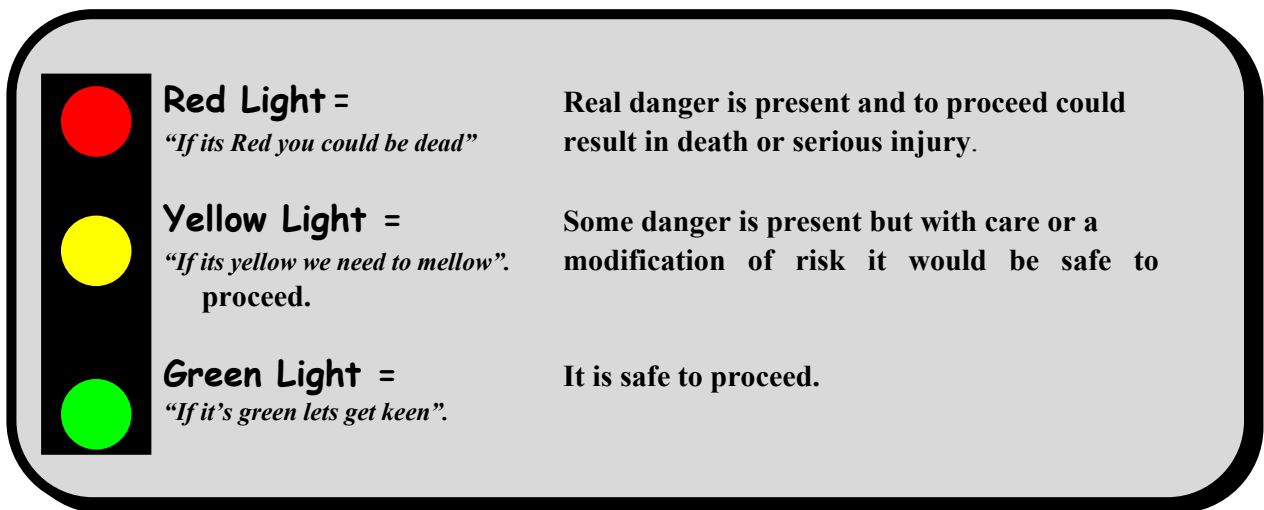


Figure 3. The Traffic Light Decision Making Model

Initial Training

For obvious safety reasons, before students are left to use the model on their own, a period of mentorship, thorough training and assessment, along with an apprenticeship under the watchful eye of a mentor in a variety of terrains and environmental conditions is required. Students need guidance in developing their own judgement and decision making prowess, and should be made aware that accidents occur due to any combination of the following:

- 1) An unsafe act.
- 2) An unobserved or underestimated unsafe condition.
- 3) An error of judgment. (Meyer, 1979, p.10).

A suggest progression for mentoring students in safe decision making could include (but not limited to) the following elements:

- Initial training trips in the field could have the leader near the front of the group stopping when hazards are encountered and educating group members as to why the situation is unsafe. The traffic light decision making model can be used to guide this discussion.
- After a number of trips and the knowledge and experience level of the group increases, the leader can hand over some of the leadership to the group, overseeing the use of the decision making process, and intervening if incorrect or unsafe decision are made Again, the leader encourages the use of the traffic light model and gives feedback on the appropriateness of decisions made by the group.
- After students experience a variety of trips, in different terrain and conditions and the students technical and safety skill have been evaluated, students could lead a trip accompanied by a leader who is only there as a back up in case students make a mistake in one of the three areas that Meyer outlined above.

- At some point however, students will be ready for leading a trip on their own, this maybe the case with long term school programs, Duke of Edinburgh trips, or tertiary training programs. Students should be well trained in recognising the shortcomings of the traffic light and other decision-making models prior to this final stage of training. [These shortcomings will be discussed at the end of this paper].

With this progression any unsafe or inappropriate decisions by the students are pulled up before they can get into too much trouble and are discussed with the mentor. With this, students are building knowledge and experience in the models use, and developing their judgement skills for use later on in the program.

Application of Model

When approaching a dangerous site, previous training and experience would have students feeling uneasy about the terrain they are in. [It is critical however to develop this judgment through previous training where students are exposed to hazards they are likely to encounter, so dangers are recognised]. They would stop and evaluate the situation, making a list of all the hazards that they could identify. They would then rate each of these hazards against the red, yellow, green light criteria. If any hazard receives a red light, students should stop and find a safer alternative to whatever they were about to do. A yellow light may mean either finding another alternative, or modifying the risk somehow to make the hazard safer. A green light would mean it is okay to proceed. An example may help illuminate the workings of the model.

Imagine a group out on a common adventure multi-day hiking trip. The hike involved several river crossings on the way to the camping destination. While there for a few days, storms and rain caused the rivers to rise, so much so that on their return journey an argument broke out among group members when the first return river crossing was reached. Most members of the group believed that if they used the taller, bigger people to anchor the smaller folks they would be able to make it across. However, a few of the group, who were not confident in water, felt quite uneasy about the idea. They decided to stop, take a break, and evaluate options using the traffic light model. The group listed all the hazards of the crossing at that time, and rated these, using the traffic light model. Figure 4 shows their decisions.



<u>Hazard Identified</u>	<u>Traffic Light Rating</u>
1. The river was chest deep on the shorter group members	Yellow
2. The current was flowing quickly making it difficult to hold one's footing.	Yellow
3. The water was icy cold but the air temperature was warm.	Green
4. A submerged tree branch could be seen piercing the surface downstream.	Red
5. It was late and several group members were in a hurry to get home.	Yellow

Figure 4. Hazards of crossing the river at this point and “Traffic Light Rating”.

Hazard 1 above was given a yellow light as the depth itself was not a life-threatening situation. Having the taller heavier members of the group anchor a group crossing, was considered a way of moderating the risk. The speed of the current, while a concern in hazard 2, was given a yellow light. Again a group crossing would have minimised the risk of the smaller members losing their footing. The icy water in hazard 3, while cold, could be overcome by a quick crossing and getting changed into dry warm clothes on the other side. Hazard 4 however, resulted in a red light. The branch protruding from the water made the possibility of someone getting stuck on a major tree snag under the surface a real possibility if they lost their footing at this point. While the bigger people could have anchored the smaller folks during the crossing, the group prudently asked the “what if” question. “What if someone does get washed down stream after losing their footing?” Any red light should automatically mean you do not proceed any further. Hazard 5 resulted in a yellow light, as the students knew that many accidents occur late in the day, especially when the group is in a hurry to get home. Despite many yellow lights pointing to a possible river crossing and others indicating caution, the one red light left the group with a simple but difficult decision. They could have tried to find a safer place to cross, or they could stay put until the water level dropped. Due to the lateness of the day, the group wisely decided to spend another night on the riverbank waiting for the current to subside.

Next morning the river had dropped. After another assessment of the above identified hazards, the group changed their assessment and gave the one red light a green, as the submerged branch was now clearly visible

and of no threat to safety because the depth and strength of the current had subsided. The only cost to the group was an extra night out.

As can be seen from the above use of the model, students would have required training in river hazard identification, along with river crossing training to be able to adequately use the traffic light model safely. Again, the importance of the mentoring process during the models initial introduction is extremely important. Along with this mentoring concern, those teaching safety and decision making need to emphasise several other important consequences of incorrect judgment when safety and decision making are being taught.

Cautioning students to crosscheck their decisions. Further training implications:

Priest and Gass (1997), recommend that when teaching the appropriate use of decision making models for the assessment of dangers, students should be educated about the factors that may inhibit their ability to use the models safely. Two areas of particular concern are, “Smelling the barn” and “The risky shift phenomenon” (p.93). Smelling the barn involves rushing to get home when the end of the trip is near. This could lead to dangerous situations being overlooked or ignored in the hurry to get home. Studies of North American accidents in the outdoors have shown that most problems occur between 3-5 pm for reasons such as being tired and trying to keep on schedule. Emphasise to students the need to keep their guard up right to the end of the trip.

The risky shift phenomenon results in a situation where less experienced group members make riskier decisions in a group situation, than when they are on their own. They do not speak up about their fears and concerns, and go along with a higher risk than they normally would find acceptable. This may result in the group getting into situations that are above their ability level, and could lead to a disaster occurring. With this in mind, there is a real need for group members to develop sensitivity for each other’s strengths and weaknesses in the field. Students need to be empowered and able to speak the truth about their concerns in a group situation, and not give in to any peer pressure to do something for which they are not ready. Again, this can be addressed during the mentoring process.

As part of the mentoring process it would be thoroughly recommended to attempt to role play, or set up training scenarios that test students knowledge of these distracters to safe decision making. If at all possible attempt to make them as real as possible by incorporating bad weather, fatigue, or conditions that may make hasty and

dangerous decisions more prevalent. The leader is then in position to pull the group up if incorrect decisions are made, but the learning from such a scenario can be invaluable.

Other applications for the model

Another great asset of the model is that it is not solely restricted for use in adventure experiences. The learning gained in the traffic light models use could be transferred to other areas of a students' life when assessing risk situations. For example: when youth are considering to: take drugs, drink drive, have unsafe sex, or speed while driving. However, for this to occur effectively, students would have to have reached a cognitive maturational age that enables them to rationally make informed and responsible decisions. One group of fourteen year old, year nine students might be able to do this well, while another group of at risk youth of the same age, may only have the maturational age of six year olds, resulting in them having limited ability to make informed responsible choices on issues of personal safety. The same precautions would also be needed in an outdoor adventure setting, however, the teaching of the model could only help the learning process, by beginning to develop skills to improve decision making when involved in dangerous risk taking.

Conclusion

As can be seen this model is clear, simple and user friendly. It provides a very objective means of evaluating dangerous situations, especially when there is uncertainty within a group. Its use of the traffic light as the basis for decision making is known by just about everyone. If students learn to use this model, and “stop” to find alternatives to dangers they come across, then their assessment of danger will improve and their adventure experiences will be safer. Its greatest feature however, lies in the fact that it empowers students to contribute to the reduction of accidents in the adventures they are participating in and offers a process that can be used in later life outside the outdoor environment.

Acknowledgments

This Traffic Light Decision Making Model was originally developed by Murray Toft, of The University of Calgary Canada, who is keen to see the model evolve and develop into a practical tool that can help make experiences safer for all who venture into the great outdoors. Thanks to Murray for allowing me to expand on his original ideas. Thanks also to Mike Gass for helpful feedback during earlier drafts of the paper.

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