# Equipping farmers to take a fresh look at rules of thumb

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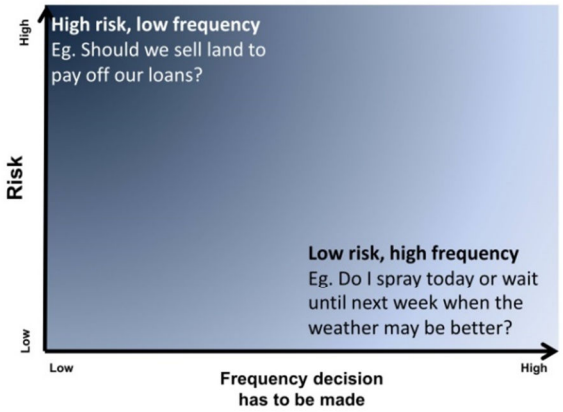
**Abstract.** Rules of thumb are valuable in providing starting points for decisions. Problems arise if rules are based on incorrect information or prevent new options from being considered. A Grain and Graze 2 project investigated farm decision making through workshops with advisors and producers. A workshop structure and series of questions to help unpack rules of thumb were developed. The objective was to equip attendees to critically analyse their rules of thumb, rather than providing 'the answer'. A common response was for participants to feel challenged in considering their rules of thumb more closely before using them as the basis for decisions or advice. Some participants were reticent to admit they used rules, insisting their advice and decisions were based on analysis. The workshops demonstrated ways in which potentially challenging conversations about decisions can be held in a constructive manner. This paper outlines relevant decision making theory and reviews the process and learnings from the workshops.

**Keywords:** Rules of thumb, workshop, decision making, risk management

## Introduction

Decisions are an everyday part of life, ranging from inconsequential to life changing. The difficulty of a decision is a factor of how frequently it has to be made and the risks associated with the decision (Figure 1). There tends to be a negative correlation between these factors, that is frequently-made decisions are often associated with lower risk and infrequently-made decisions are often more risky. Less common decisions are made more difficult by the lack of practice in making them and limited opportunities to alter the decision after it is made. For instance the opportunity to buy the property next door is a decision that may only arise once over the course of a farmer's career, but they will live with the consequences (good or bad) for the rest of the time they are on the farm.

**Figure1. Difficulty of decisions is a function of risk and frequency.**




A good decision may not always turn out to be the right one though, and a right decision can only truly be seen with the clarity that hindsight affords (Jackson & Malcolm 2011). Good decisions are generally guided by good questions – they use available information and relevant understandings to inform the choice. However, with the variability of climate, market and unforeseen occurrences, a good decision can still turn bad. As Kahneman insightfully surmised, 'the pain of loss is twice as great as the pleasure of equivalent gain' (Kahneman 1979). Decisions made on farm that do not go to plan can create stress in many areas. Three key ones are farm economics, relationships and personal wellbeing that will be explored further in the following paragraphs.

***Farm economics***

Decisions around the level of risk to accept in a business can change farm profitability rapidly. Modelling by Hunt et al. (2015) demonstrated the impact on annual net farm profit that a change in equity, enterprise mix and seasonal rainfall can have. In an above average year at Karoonda, the most profitable decision would be running 100% crop; however the same decision in a below average year resulted in the largest financial losses. What could be the right decision in one season is the same one that sees the farmer selling up in another. As one workshop participant commented, 'there is no silver bullet'. Rather, in making decisions the individual needs to be aware of the potential risks to their business over a range of seasons.

***Relationships***

Around 99% of Australian farms are family owned and operated (National Farmers Federation, 2014). Consequently there is an intimacy between the business and family relationships that is uncommon in most other industries. A bad decision does not just stay at work but becomes dinner table conversation. For a business to operate smoothly there needs to be trust in the capability of each person to fulfil their role. Decisions that turn bad can erode this trust and place stress on relationships. If the decision is founded on advice from an advisor, then a negative outcome can damage the confidence that the farmer has in their expertise.

***Personal wellbeing***

Making decisions can be stressful, especially when there is uncertainty around associated risks. Having an external agent give their opinion on a decision, be it a friend, family member or consultant can help share the responsibility of making the decision and reduce stress. Ultimately though, the individual who is exposed to the risk needs to be comfortable in the decision and their ability to weigh up the odds. If the decision turns out badly, the decision maker is left with the unsettling feeling of failure and the complex emotions that go with it, even though it may have been a good decision and the outcome was beyond their control. Farmers surveyed in 2002-2003 reported pressures such as not being able to meet family needs and the stress of losing stock in drought as adversely affecting mental health and wellbeing, leading to tiredness and impinging on relaxation time (Henderson & Fragar, cited in Fragar et al. 2008). Prolonged fatigue and stress can have serious implications for physical and mental health.

Decision outcomes affect many areas of a farm business and the people involved. Consequently it behoves farmers and advisors to have an awareness of how decisions are made so as to help them make better decisions. A project under Grain and Graze 2 focused on decision making in the complex environment of farming. Three workshops were conducted across southern Australia with advisors, researchers and farmers to gain their insights on how decisions are made and equip them with strategies for critically approaching their own decision making. The processes undertaken in these workshops and key learnings are presented in this paper.

**Decision making**

People approach decisions differently depending on their experiences, values and beliefs. In our post-modern society we would like to believe that our decisions are based primarily on analysis and fact. However the volume of decisions we are required to make on a daily basis leads us to make shortcuts. These shortcuts may be a rule of thumb or a 'gut feel', henceforth collectively called heuristics. Heuristics enable decisions to be made more quickly and with less analysis of the problem (Long 2009).

Multiple constructs and diagrams have been developed over the years to describe how decisions are made (e.g. England 2014; Long 2013; McCown 2001). Several of these were trialled in the Grain and Graze decision making program to compare what was most readily understood and easily remembered. The representation selected was that of the head, heart and gut:

- The head is the analytical, fact based aspect to decision making
- The heart is the human factors such as our emotions, values and beliefs
- The gut is the intuition and rules of thumb that 'feel right'.

The importance of 'the gut' in decision making cannot be overestimated. 'In a well-functioning operation [intuition] is statistically the most prevalent mode and there is no felt need for aids to decision making' (McCown 2005).The majority of the time, intuition and rules of thumb serve their purpose well of guiding decisions and providing a start point from which to consider potential options. Analysis and decision support tools may bring to light new information that changes how decisions are made. Over time the decision maker grows their intuition through learning and experience so the 'new' information is assimilated into their intuition and the decision support tool made redundant (McCown et al. 2012).

The key difference between intuition and rules of thumb is their tangibility – rules are more easily communicated and transferred than intuition. They are a convenient form for communicating agricultural research messages succinctly. Thus it is important that we understand how rules of thumb are used and how they change. The Grain and Graze workshops opted to focus on rules of thumb as a device that has received little attention in agricultural extension in the past but is readily used by us all.

The formulaic nature of rules of thumb can be comforting when there is a lot of uncertainty in a decision. Lead facilitator, Jeanette Long, used the example in the workshops of a female partner in a family farm business who had been given the responsibility of the company's grain marketing. Her family's rule was 'sell a third of grain after seeding, a third at harvest and a third after harvest'. Whether or not this rule was sensitive to changes in prices or the season was not of a high concern for her. So long as she followed the rule agreed to by the family, she was not solely responsible for grain marketing. This provided her a certain level of immunity to blame if it was not the most optimal grain selling method.

Problems arise when rules of thumb stop being guiding principles and become solidified in ones' mind as infallible or as beliefs. A sense of devotion to a particular way of making a decision can be likened to 'friction' in the system (Murray-Prior & Wright 2001), a sticking point for change. Dedication to a rule of thumb can lead to new information being ignored or challenges rejected on face value. Human nature finds change difficult. Being faced with not just a change in how decisions are made, but also that the rules used in the past may have been wrong, makes it all the more challenging.

**Methodology for taking a fresh look at old rules**

Agricultural research has been successful in increasing knowledge around biological, chemical and physical aspects of production systems, however it can be challenging within a research context to translate these into principle based, systems solutions (McCown, 2001). Farmers are progressively using advisors more to assist in navigating the plethora of new technologies and practices to arrive at a decision that fits with their system. Two areas that influence the efficacy of consultants are the farmer's ownership of a decision and acceptance of the legitimacy of the expert (Lane 1992). Both are addressed by making recommendations more transparent. When advisors have a more in depth understanding of how their own decisions are made, they are better able to communicate their reasoning to the farmer. This has the advantage of providing a learning opportunity rather than prescribing a solution and can also lead to the consideration of new options. The resulting interaction is more collaborative than top-down approaches and the decision made utilises both the farmer and advisor's expertise.

The intention from the outset of the workshops was to provide a learning opportunity for attendees to consider their own decision-making processes, particularly their use of rules of thumb. It was reasoned that learning to unpack rules of thumb used in decision making is a skill that can be transferred to numerous other situations, as opposed to providing a single-use solution. Consequently the agronomic topics varied, but the method, was consistent between workshops.

**Method and findings**

Over the three workshops, the method was refined to optimise participation and learnings. The delivery team found it was beneficial to have a theme for the workshop to provide a concrete start point for discussions. An email was sent around a few days beforehand alerting attendees to the topic of the workshop and some preliminary questions to help them start thinking in the space. Workshops ran for around three and a half hours, with a break for morning tea and finishing with lunch. These times were valuable for casual discussions around the topic and general networking for attendees. During the workshops, seven areas were covered off in the following order.

1. Attendees introduced themselves and gave a fun rule of thumb

This was an ice breaker and gave everyone the opportunity to speak in front of the group on a topic well known to them. Rules people came up with ranged from 'when making tea, its one spoon per person and one for the pot', through to 'always put your underwear on before your jeans'.

2. Ground rules

Attendees were asked what was important to them for the smooth running of the morning. Rules that were raised included respecting everyone's opinion and experiences, turning mobile

phones on silent and running to time. It only took a few minutes but was valuable in clarifying how the morning would work.

3. Introduce decision making theory

This helped set the scene for the rest of the workshop in showing the complexity and multiple factors comprising a decision. We found this worked best when discussion was preceded by a basic description of the decision making model (e.g. the head, heart and gut) followed by a discussion of what attendees saw as being the factors driving decisions. In the first workshop this was more of a presentation from the front. However we found getting the attendees to do the thinking led to more dynamic interactions throughout the morning and ideas being raised that had not previously been considered. These brainstorms were often energetic as people raised ideas that others identified with or could expand upon.

Workshop discussion was particularly robust when it came to 'the heart' and attendees were asked 'what are the values/beliefs/emotions that drive a decision?' It was often the advisors who would speak bluntly here on behalf of their clients. Their contribution was enriched by having witnessed a variety of decision makers and being able to respond from an external perspective.

A factor raised as influencing decisions was perceived peer pressure. Peer pressure translates to many areas of life, including the vulnerability that comes from admitting ones' personal emotions, values and beliefs in front of a group. This may have led to farmers hesitating before contributing to discussions which appeared to be the case for some but not all in attendance. A later section will touch on ways to hold challenging conversations such as this.

4. Brainstorm of rules of thumb

Discussion was broken up into table groups, with a facilitator scribing the rules of thumb identified on butchers' paper. This was one of the key areas of learning from a facilitator perspective.

The first workshop consisted of a mix of agronomists and farmers, some of which were the clients of the agronomists. When the time came to discuss their rules of thumb, one agronomist denied having any, holding that his advice was based on analysis. When the farmer sitting next to him contributed some rules and was asked where they came from, he pointed at the agronomist.

Another challenge was keeping conversation on track and focused on rules of thumb rather than straying to discussing various research findings. It was helpful having a facilitator present on each table to steer discussion and allow everyone to speak. We also found informing attendees of the focus topic(s) before they arrived aided in their ability to contribute to discussion from the beginning. At the first workshop there was no defined topic which made for a challenging start as attendees and facilitators wrapped their heads around a relatively new concept. The second workshop had a topic per table (agronomy, sheep and agri-business), with attendees allocated to tables on arrival based on their area of expertise. This introduced a more focused approach, with lively discussion at each table, even if it strayed from rules of thumb at times. The final workshop was the most successful in this regard. Attendees were emailed a few days prior to notify them of the structure of the morning and with some preliminary questions for them to begin considering their rules of thumb on the topic (time of sowing). On the day, attendees were engaged from the outset and each table came up with an extensive list of rules of thumb surrounding the topic.

5. Unpacking rules of thumb

Each table nominated one or two rules to unpack using questions that explored the following:

- origin of the rule
- emotions the rule appeals to
- experiences of the rule working/not working
- research they may have done or come across that validates the rule
- potential blind spots the rule may cause them to neglect
- adaptation of the rule in management decisions
- evolution of the rule.

This exercise was quite time consuming and often led to off-topic conversations, reiterating the value of having a facilitator present at each table. Overall the rules unpacked in the workshops were the favourite ones that are commonly used. This meant people had a lot to contribute to the discussion and generally showed these common rules to be substantiated. The value of the exercise was in practicing how to approach an ingrained rule of thumb and worked towards the

aim of equipping attendees to challenge their own rules of thumb that they may be assuming are valid. The following is an example of a rule of thumb identified and unpacked at the second workshop.

*Rule: It is less risky to under stock in case of a bad break*

> *Origin?* It is mainly a response to the feed base, signifying an aversion to high levels of supplementary feed that increase costs and labour requirements.
>
> *Experience?* Participants felt it had worked at reducing the need to feed out or sell stock in the past. Although really poor breaks do not occur frequently, they could pose high risks to the farm profitability (Figure 1).
>
> *Emotions?* There was fear of having to spend a lot on feed or watching stock lose condition. One consultant commented that 'no one likes livestock in a bad year'.
>
> *Adaptation?* A consultant believed that total feed availability was more important than feed quality, which provides a point for adaptation in increasing feed availability to sustain stock numbers, even if the quality may be sub-optimal.
>
> *Blind spots?* There is an opportunity cost from under stocking.
>
> *Evolution?* Weather forecasting is not always very accurate or reliable, so this rule is a way of hedging ones' bets. If forecasting improves in the future, it may give people confidence to buy in stock before a good year.

Steering the discussion to the emotional side of decision making was the most difficult section of the exercise. Highlighting emotional factors is an important step in understanding subjective factors in decision making but has the potential to make people uncomfortable. It was helpful having the notes from the previous discussion (exercise iii) visible to refer to. Facilitators needed to gauge how much to persist in asking questions to uncover the emotional side of rules of thumb.

6. Thinking about how rules change

The question was posed, 'what needs to happen for a rule of thumb to evolve or shift?' which led into good discussion around drivers of practice change.

The main responses were around experience. A lot of learning in agriculture, being a primary industry, comes from experiences of what does or does not work. Feedback from experience to a rule of thumb or intuitive understanding can sometimes be clouded by the complexity of the situation. One consultant commented that he had 'never seen an average year', making it difficult to deduce the effect of the season versus the effect of a decision. Attendees mentioned the value of monitoring and recording experiences to better inform hindsight and prompt earlier change.

7. Summarising learnings from the workshop.

As a final activity, attendees were asked to share with the group something they had learned or had surprised them. In sharing it with the broader group the learning was multiplied and facilitators were given insights into the most useful activities. A common response from advisors in particular was that they wanted to better understand their rules of thumb before using them to make recommendations to farmers or passing them on to a younger agronomist.

**Having challenging conversations**

An advisor at the Perth workshop noted the 'cliff face model' that is common in farm practice – you keep doing what you know until you are teetering on the edge and there is no option but to change. Part of this is the high risk nature of a lot of agricultural decisions which can lead to an aversion to change. As the old adage goes, 'better the devil you know than the devil you don't'. Having conversations about change can be unsettling where there is resistance to the idea or, more challenging, the need to recognise that the current way is suboptimal.

No one likes the feeling of being wrong; even more than that we do not like having it pointed out to us by someone else. Throughout the workshops we encountered a variety of responses to the call to reconsider decision making techniques.

- Defensiveness – this was the case with the advisor mentioned in the 'brainstorming rules of thumb section'. When faced with the notion that he may have been making recommendations on unsubstantiated rules, he became defensive and denied using rules of thumb.

- Embarrassment – a lot of attendees mentioned they needed to consider their rules more carefully and were taken aback that they had been using them for so long without doing so earlier.
- Deflection – pointing the finger at the person the rule came from is an all too easy deferral of responsibility. This response links back to a fundamental reason that rules of thumb are used, as they defer the responsibility of a decision to an external agent, as in the instance of the female partner managing grain marketing (see the section on decision making).

These responses highlight the value of the methodology employed in the workshops. Rather than having confronting and blunt conversations, attendees were walked through the tools to challenge their own rules. It did not restrict conversations to the morning of the workshop but intended for the greatest benefit to come in the following weeks and months, in conversations with partners and trusted advisors.

It was important to establish a sense of equality in the room to avoid a 'teacher-student' like forum. Times of open discussion were valuable in achieving this as they gave attendees the opportunity to contribute their ideas and experiences. It demonstrated that everyone had something to contribute. It was not that the facilitators had the answers nor were they there to test the attendees; rather it was a collaboration to further both of our understandings of decision making. It was also humbling how honest people were in admitting decisions that went wrong, making it all the more important for facilitators and other attendees to be respectful in their responses.

Overall the workshops were highly valuable for both facilitators and participants. They served as a platform for sharing our ideas and experiences to further our understanding of decision making. The frequency with which rules of thumb are referred to and communicated in the industry is evidence of the importance of this work and having an awareness of how rules are being used. This work was conducted with mixed farmers, but is transferable to other areas of the industry and could easily be incorporated as a component of future projects.

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