

Are you keeping up with Jeremy Jones?

Positional preferences and risky terrain choices



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In economics, there is a growing body of research that suggests that many people have so-called "positional preferences". A positional individual derives utility from their consumption relative to that of others. Let's use an example. Suppose that you own a 5 year old car. It works reasonably well and takes you wherever you want to go. You are quite happy with it. Now suppose that you get a visit from your brother or son in law, who has recently bought a brand new and really nice car. How does your level of satisfaction react to this situation? If you feel a reduction in wellbeing, you are positional. If not, well, then you don't have positional preferences. Positional preferences are unfortunately problematic. The reason is that, as you try to climb to the top of the ladder of success, there is always someone left behind who will try to catch up with you. In risky activities such as investing or backcountry skiing, this kind of behavior has the potential to draw people into riskier situations. To see if this positionality carries from economics into backcountry travel and risk-taking behavior, we use results from an online survey distributed in North America ($N = 745$), to analyze if backcountry riders' level of contentment with their personal riding is affected by others' backcountry activities, i.e., if they are positional, and if positionality for backcountry experiences is associated with increased risk-taking behavior. Our findings suggest that many are positional, and that positional preferences for challenging terrain is correlated with relatively high risk exposure. The positionality effect is present regardless of level of avalanche training and suggests that current avalanche education does not change one's positionality related to risk taking behavior. Our results provide support for the hypothesis that social comparisons may overwhelm logic we learned in our avalanche class. It further suggests that avalanche courses should be adapted to deal with the "keeping up with the Joneses" (not necessarily Jeremy Jones), effect by incorporating some comprehension of personality type or at least introspection in the presentation of course material.



Introduction

The main aim of our study was to test if positional preferences, related to backcountry skiing, is associated with increased risk exposure in terms of avalanches. Research in psychology and economics show that self esteem is closely related to social comparisons and relative social status (Baumeister and Leary, 1995; Loewenstein, 1999; Shrauger and Schoeneman, 1979; Festinger, 1954; Tesser, 1988; Ravis and Sheeran, 2003; White et al., 2009).

Economists refer to utility derived from social comparison as positional preferences. Social aspirations encourage people to work harder to be more successful and to project that success – think Ferraris. However, because social position is relative, high levels of performance among some individuals may encourage others to emulate them. As a consequence, positioning creates incentives to invest more in order to "keep up with the Joneses", and reduces the wellbeing of those lagging behind (e.g., Veblen, 1899; Duesenberry, 1949; Easterlin, 2001; Luttmer, 2005). In areas of potential high risk,

Four skiers discuss terrain choices at the top of a slope in the Northern Chugach Range, Alaska. Did positional preferences influence their terrain choice? Photo: Jordy Hendriks



such as travel in avalanche terrain, hoped-for gains in social status has the potential to increased risk exposure, which in avalanche terrain can get you killed or injured.

These behaviors are emergent. In the world of consumer science the largest consumer segment globally is what is termed “aspirational consumers”. These are people that want something to believe in and are open to being inspired. The trend toward symbols of their identity and belong to distinct “tribes” that they associate themselves with strongly. Teen fashion and music are common examples. Aspirational consumers define themselves with the tribes’ beliefs, vision, values and behaviors. They thrive on social validation and social media and are eager to share their ideas and experiences. All this gives them meaning in both their consumption and they behaviors. Aspirational consumers are well represented in the outdoor community and backcountry community (Outdoor Industry Association, 2015). Just look at the number of followers on Instagram of top skiers and outdoor athletes.

Research on the link between risk-taking behavior and social aspirations is still relatively scarce, but a few studies in other fields provide suggestive evidence that excessive risk exposure may be related to individuals who strive for social acceptance (e.g., Leary et al., 1994; Aloise-Young et al., 1996; Miller- Johnsson et al., 2003).

Concerning risk-taking in avalanche terrain, some findings indicate that the desire to gain social status may play a role. For example, McCammon (2002; 2004) suggested that individuals who met others during the tour missed more warning signs than did individuals who met no-one. Similarly, Mannberg et al (2018) find that individuals who state that they tend to compare the type of terrain that they ski, with that of others, are over-represented among individuals with avalanche experience. However, to the best of our knowledge, no one has to date directly tested if positional preferences for risky leisure activities increase risk-exposure.





Methods

Participants

We collected data during January - April, 2018, using an online survey. Seven hundred and forty-five individuals over 18 years of age agreed to participate and provided complete answers to questions relevant for analysis. Of these, 24 percent were female. Median age was 35. Most participants rated their backcountry travel skills as

Figure 1: Hypothetical terrain choices and avalanche forecast.

The Field	The Bowl
	
NW / 3000 ft (1000 m) / 27° - 23°	NW / 3000 ft (1000 m) / 40° - 27°
<p>Avalanche forecast: Moderate (level 2). Snow: 8-24 inches (20-60 cm) of mostly loose powder. At places, the wind has created soft wind slabs. There may be weak layers between the wind slabs and the old snow underneath. A persistent weak layer deep down. All slopes are untracked.</p>	

high: 19 percent rated themselves as beginners or intermediate backcountry travelers, 38 percent as strong, and 43 percent considered themselves to be experts or extreme backcountry travelers. The sample was relatively experienced in terms of years of skiing in the backcountry with a median of 6 years, and the average number of days skiing in the backcountry per season had a median of 15 days. Fourteen percent of the sample had no formal avalanche training, 66 percent had training corresponding to a recreational level I or II, and 19 percent had professional avalanche training. 41 percent has experience of an avalanche accident or a close call.

The survey

We measured risk-taking behavior in avalanche terrain via hypothetical ski terrain choices using an on-line survey. Respondents read about a hypothetical backcountry ski tour, including information about weather, avalanche, and terrain hazards, and were asked which of two alternative routes down the mountain that s/he would prefer to ski, and which would they accept, to ski if someone in their group wanted to ski it, and no one else objected (compare bergundsteigen #101, see figure 1).

Weather, snow conditions, and the overall avalanche danger level and problem were identical for both runs and was provided in detail.



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Slope, and terrain features affecting the consequences of a fall or an avalanche varied systematically: The Field represented low angle terrain with low probability of an avalanche occurring and no dangerous terrain features (i.e., simple terrain according to the Avalanche Terrain Exposure scale, ATES), while the Bowl is a steep terrain trap in which avalanching is possible (complex terrain according to ATES). The order of presentation of the two runs was randomized to avoid ordering effects.

In order to control for differences in perceived risk, we asked respondents to answer the following question: *“Keeping the information about terrain and snow conditions in mind: how big do you think the risk for an accident (e.g., due to an avalanche or a fall) would be for you if you skied down this run? The value 1 means that you think that it would be totally safe for you to ski down the run, and the value 6 means that you think that it would be a very high risk for you to ski down the run.”* In addition to allowing us to control for how risky they thought each run was, this question further made it possible to check if participants ranked the risk of the two runs in accordance to our intended design.

We measured positional preferences by asking the respondents about how their level of contentment with a hypothetical riding weekend would be affected if they later found out that other riders skied either more or less challenging terrain than they did. An individual is defined as positional if s/he experience a reduction in level of contentment if other riders rode more challenging terrain than s/he did and an increase in level of contentment if other riders rode less challenging terrain than s/he did. Both conditions needed to be met before we classified the participant as positional.

We used two measures to control for attitudes to risk: The Stimulating-Instrumental Risk Index (SIRI, Zaleskiewicz, 2001) adjusted to skiing activities (Makarowski, 2013), and a risk attitudes measure developed by Dohmen et al (2011). SIRI aims to capture both preferences related to stimulating-, and more goal-oriented risk-seeking, but our analysis only used the stimulating risk-seeking factor in the analysis. The Dohmen risk attitude measure asks the respondents directly how willing they are to take risk during skiing activities (scale 1-10).

We used the student t-test to compare between our respective groups, where we considered $p < 0.05$ as the significance level. We also use a logistic regression model approach to model to examine associations between position preferences, ski terrain, risk measures and demographic parameters.



Results

Positional preferences

Thirty-two percent of the participants state that they would feel more content with their riding weekend if other riders rode less challenging terrain than they did, and less content if others rode more challenging terrain than they did (Figure 2). These were positional individuals. They also state that they believe they would receive respect

Figure 2: Who is a positional rider?



from friends if they ski steep terrain, that they themselves admire people who ski steep. Positionals are more likely to talk about and post pictures of steep terrain than more mellow terrain (Figure 2). The differences between positional and non positional riders were highly significant for all three of these questions.

Risk-taking behavior

Only 7 percent ($N = 54$) of the sample state that they prefer to ski the relatively risky run, i.e., the Bowl. However, 24 percent ($N = 177$) state that they would accept to ski down this run, if someone else in the group wanted to ski it. Of that same 24 percent, 69 percent perceive that the Bowl is riskier to ski than the Field (the rest perceive the Field to be equally risky as the Bowl). In other words, while few would choose on their own to ski a line they think is risky, nearly a quarter of our sample would give in to peer pressure and ski the run. They make this choice presumably because they do not want to lose respect or status within their group.

To test if positional preferences for ski terrain is associated with increased risk exposure, we estimate a logistic regression model on the choice to accept to ski the Bowl. We find that positional preferences for ski terrain are significantly linked to both acceptance to



Figure 3: Are positional riders willing to ski a potentially risky line? And does avalanche education influence this?



ski the Bowl, and willingness to accept more risk. Our estimation of marginal effects (i.e. the degree to which the probability changes) suggest that the probability that an individual accepts to ski the bowl is 15 percent among non-positional individuals, while it is 23 percent among individuals who display positional preferences. Again, we see positionals accepting higher risk behaviors partly as a result of social interactions. *The marginal effect of positional preferences is greatest for individuals with no avalanche training, but the effect remains significant for individuals with both basic and - professional training (Figure 3).*

Our results confirm previous findings that perceived risk, as well as risk attitudes and sensation-seeking preferences are strongly linked to risk-taking behavior (e.g., Furman et al., 2010; Marengo et al., 2017). Importantly, we find weak support for the hypothesis that individuals engage in risky activities for instrumental reasons (i.e., to reach a goal, rather than to experience a thrill).



Discussion

Backcountry riding activities are associated with a trade-off between costs, i.e., the effort to get up a mountain, and the risk of an injury from a fall or an avalanche, and benefits from riding good snow, challenging our abilities, and enjoying nature. If all backcountry riders were rational and individualistic, they would choose a level of risk exposure that match their risk preferences, and their preferences for terrain. *Positionality for ski terrain implies that individuals' well-being is not only affected by their own snow conditions and riding accomplishments, but also by what other riders do; or are thought to do.*

In theory, the negative effect on feelings of contentment from others' accomplishments creates an urge among some to seek out more challenging terrain. Hence, if many backcountry recreationalists hold positional preferences, and if such preferences affect behavior, we might see that more and more risky terrain gets skied under dangerous conditions. This could be particularly true if positionals measure themselves against others with greater skill and ability. *Anecdotaly, we see evidence of this in the progression of terrain used by ever increasing numbers particularly in crowded ski regions.* Our analysis is based on hypothetical choices and is therefore plagued by hypothetical bias. However, our findings suggest that many individuals' level of contentment with their backcountry activities are affected by the riding activities of others, and that this does affect their (hypothetical) terrain choices. Further, these effects are present for all levels of avalanche training. The implication of these findings is that avalanche education may be more effective if student personality traits were explored and course curriculums could discuss with students the role of social media and positionality.

From the comments on the survey, it appears as if some respondents had not previously thought about the effects of measuring one against one's peers, and many expressed that answering the questions made them ask themselves new questions about their choices in the backcountry.

Although further analysis and research is needed to validate our results, we argue that an inclusion of discussions about (perhaps in combination with simple tests of) positionality in avalanche courses may prove fruitful. By including this as part of future avalanche education we may increase the awareness of the role of positionality in decision making in avalanche terrain, and through this awareness negate, or reduce the potential negative consequences.

Find out more about our work, and ongoing research at the White Heat Project: whiteheatproject.com

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