

1 **Communicating Paradox: Uncertainty and the Northern Lights**

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6 ***Abstract***

7
8 While many characteristics of tourism products are well known, relatively little work has
9 explored elements of uncertainty and risk. Little is known about how tourism operators
10 communicate aspects of uncertainty. This qualitative study uses content analysis to explore
11 the language used in promotional material of tour operators and destination management
12 organisations to communicate the unpredictable nature of northern lights. The study involves
13 two Norwegian destinations (2004-2014). Three rhetorical strategies are identified: first, the
14 rhetoric of technology, enhanced mobility, and adding additional activities; secondly, through
15 'hiding' or obscuring the uncertainty; and thirdly, through employing culturally and
16 geographically appropriate metaphors (i.e. 'hunt') to embrace the element of uncertainty. This
17 study advances our understanding of how tourism operators rhetorically address temporally
18 and/or spatially uncertain attractions by demonstrating how the operators negotiate and
19 minimise uncertainty through the narrative of 'the hunt'. This rhetoric implies that uncertainty
20 can enhance value in a touristic experience.

22 **1. Introduction**

23
24 Tourism in the Arctic has been increasingly associated with the Aurora borealis or
25 Northern Lights (NL) which are a major motivator for visiting destinations in the north in the
26 winter (Edensor, 2010; Heimtun & Viken, 2016). But to date little research has been
27 conducted on NL as a tourism product (Edensor, 2010; Bertella 2013), despite the fact that
28 gazing at northern/southern lights is an important component of what Weaver describes as
29 'celestial tourism' - 'the observation and appreciation of naturally occurring celestial
30 phenomena' (2011, p.39).

31
32 While NL has been a boon in terms of helping to address seasonality issues in northern
33 regions the last decade (Heimtun, 2015), to the extent that the industry now uses the label
34 northern lights tourism (NLT), the display of NL is difficult to forecast locally as they depend
35 upon the solar wind (University of Alaska Fairbanks, 2015), clear sky and local climate.

36 Tourists may therefore have to visit a region for a number of nights until they get an
37 opportunity to see the lights. That sightings of this celestial phenomenon cannot be controlled
38 by the tourism industry constitutes a major challenge to the marketing and delivery of NLT,
39 and there are implications of this risk or uncertainty for a number of stakeholders in NLT,
40 including the tourist, the tourism provider, and the indirect beneficiaries of tourism
41 expenditure within northern regions.

42
43 In a similar way to some other tourism attractions, (e.g. wildlife tourism), NLT relies
44 upon a naturally occurring phenomenon that is temporally and spatially discontinuous. But
45 even though sightings of the lights, other celestial phenomena, and wildlife such as whales,
46 penguins, and so on can be rare, tour operators still offer these forms of tourism and tourists
47 continue to buy such products. Although some of the tourists' excitement lies in the
48 anticipation of the possibility of seeing a natural phenomenon (Curtin, 2010), the possibility
49 of non-sightings adds to the challenge of selling such 'uncertain' tourism products and
50 experiences – defined as those where the aspect of supply cannot be guaranteed, or where
51 there is a low possibility of the tourist actually experiencing the 'promised' phenomenon.

52
53 Such tourism operators need to deal with this uncertainty in both the promotional (pre-
54 visit) and operational (visit) phases of the tourist experience. In this paper we focus on the
55 former by examining how destination management organisations' (DMOs) and tour operators
56 in Northern Norway communicate the uncertainty of their product in sales brochures through
57 the language of marketing. We also consider how such messages may have changed over a
58 period which has seen considerable growth in the market and in the number and diversity of
59 NLT products. This knowledge will contribute to our understanding not only of celestial
60 tourism, but more broadly about what rhetorical strategies the tourism industry uses to
61 manage uncertainty in the supply of 'temporally and spatially uncertain tourism products'.
62 We continue by examining relevant literature and methods used in the study, before exploring
63 and discussing the seven rhetorical strategies employed by the tour operators and DMOs.

64 65 **2. Literature Review**

66 *2.1 Uncertainty in supply of tourism products/experiences*

67 Here we explore the marketing and delivery of NLT through a broad framework of risk.
68 Our understanding of risk in tourism has been considerably advanced by the recent

69 contribution of Williams and Balaz (2015) who make a number of points relevant to NLT and
70 similar temporally/spatially risky tourism products. First, risk and uncertainty are inherent to
71 tourism, and can provide lenses for deepening our understanding. The authors highlight the
72 difference between risk and uncertainty, citing the work of Knight (1921) who associated risk
73 with ‘known uncertainties’, and uncertainty with ‘unknown uncertainties’. To simplify, risk
74 may be quantifiable, whereas uncertainty is not. A central premise concerning risk “is that this
75 begins where knowledge ends” (Williams & Balaz, 2015, p. 272). As Maubossin (2007)
76 writes, “Risk has an unknown outcome, but we know what the underlying outcome
77 distribution looks like. Uncertainty also implies an unknown outcome, but we don’t know
78 what the underlying distribution looks like”. While the manifestation of the Aurora may be
79 unpredictable on a night-to-night basis, we know the underlying outcome distribution. This
80 for the purposes of this paper, we focus upon the element of risk, which is clearly more
81 applicable to the phenomenon under investigation.

82

83 What is important, however, is the “lack of control that most tourism firms exercise over
84 the tourist experience, which is shaped by a range of other actors and external events”
85 (Williams & Balaz, 2015, p. 275). However, strategies may be employed for *managing* risk.
86 At the firm level, these include: acquiring and utilising knowledge; trust; diversification; and
87 insurance/hedging. Similarly, addressing supply chain risk is an important management task
88 (e.g. Olson and Wu, 2010).

89

90 Risk also manifests at different scales, from the individual to group and destination scales
91 (Williams & Balaz, 2015). Importantly, this opens the discussion to consideration of how the
92 perceptions of risk may differ between the tourist and the tourism provider. Central to these
93 differences may be the role of knowledge, which may determine how the degree of risk
94 (financial, performance or time) is perceived (Laroche, McDougall, Bergeron, & Yang, 2004;
95 Quintal, Lee & Soutar, 2010). This will influence tourists’ purchase decisions and firms’
96 marketing and delivery approaches.

97

98 Our point of departure, however, is that risk of failure can be ‘good’, which is somewhat
99 counter-intuitive. Typically, risk has been cast in a negative light - notwithstanding the
100 growth of adventure and risk-seeking tourists (e.g. Elsrud, 2001; Laviolette, 2010). This latter
101 category of tourism, however, relates more to the provision of sensations to tourists in
102 ostensibly risky, but really risk-managed environments. Williams and Balaz (2015) in their

103 review of tourism risk and uncertainty research provide little room for interpretation of risk in
104 a more positive light, for example around monetary/financial and performance risk (Solomon,
105 1999), the areas of risk which are more relevant to NLT.

106

107 However, others have identified a link between risk and authenticity of the tourism
108 product - and by extension, with visitor satisfaction. Wang (1999) for example identifies the
109 need for individuals to turn to tourism and the risk or uncertainty that this entails in order to
110 counter the over-predictability of everyday life, and how this is an essential component of
111 desired 'intra-personal authenticity' in tourism. Similarly, Hinch and Higham (2001) write
112 about how the uncertainty of sporting outcomes is essential to the authenticity (and thus
113 attractiveness and success) of sport tourism.

114

115 To gain a better understanding of the importance of risk in the tourism experience we can
116 draw upon the experiences associated with other forms of temporally/spatially risky tourism
117 products, in particular, wildlife tourism. Sighting elusive wildlife is unpredictable due to the
118 vagaries of animal behaviour and other ecosystem interactions. So how important is this for
119 the tourist? Some wildlife viewers accept that finding animals is unpredictable "and value the
120 experience even when they don't get to observe the animal, while appreciating actual
121 sightings all the more for their rarity" (Knight, 2009, p. 168). Evidence (e.g. from whale
122 watching (Orams, 2000; Valentine, Birtles, Curmock, Arnold & Dunstan, 2004)) suggests that
123 while sighting the target species is important, visitor satisfaction is not solely linked with this,
124 and that other elements (of the 'hunt') contribute to visitor satisfaction in the absence of a
125 sighting. Despite this, for many wildlife tourists there is an expectation of a sighting. And in a
126 similar way to our NLT operators, as we discuss below, many commercial operators market
127 their tours "with a promise of close-up views" (Knight 2009, p. 168). While such promises
128 may be seen by operators as a means of managing their risk (in this case financial risk) it is
129 unlikely that such a strategy will be sustainable, as inevitably the gap between visitor
130 expectations and experience will lead to discontent and likely negative word of mouth (and
131 social media) messages about these operators.

132

133 The notion that risk can enhance customer value (outside of specific niche adventure
134 tourism activities) has not really been explored. Boksberger and Craig Smith (2006), for
135 example, in their 'risk-adjusted model' of customer value and risk, portray risk (objective or
136 subjective) as something to be minimised. They suggest that operators address perceived risk

137 on the part of potential customers, through managing their marketing communications. So,
138 indeed, it is little surprise that providers of temporally risky tourism products such as wildlife
139 tourism, or NLT, through such communications may promise more than they can deliver.

140

141 In summary, this review portrays little positive in terms of risk for the tourist or the
142 tourism provider, despite inklings that it may be related to authenticity of experience.
143 Strategies for managing risk in the supply of temporally/spatially unpredictable tourism
144 products are unclear. Our study explores strategies that two destinations and their tourism
145 operators have adopted, focusing on, as Boksberger and Craig Smith (2006) suggest,
146 marketing communications.

147

148 **3. Case study areas and development of NLT**

149

150 The towns of Tromsø and Alta are the main NL destinations in Northern Norway.
151 Tromsø is situated in the county of Troms and Alta in the county of Finnmark, both above the
152 Arctic Circle (66° N) and situated near the geomagnetic/auroral pole, the zone of maximum
153 frequency of NL displays. Although the lights have fascinated travellers to the north for
154 centuries, commercialised NLT has been slow to start. In the 1990s, in Tromsø, NL packages
155 were sold to a small number of Japanese group tourists (Borch, Moilanen, Olsen &
156 Rydningen, 2006), and until 2006 this was the main market, with NL sightings mostly taking
157 place in the town centre (outside the hotels). The real starting point for NLT, for both Tromsø
158 and Alta was the winter of 2004-2005, when individual tourists, for the first time, were
159 offered scheduled guided tours on a daily basis (Table 1). Table One shows the number of
160 tour operators and tours offered each season in the two cities from 2004-2014 (with the
161 exception of a few seasons from which we were unable to get access to the catalogues,
162 labelled N/A). By the season of 2013-2014, NLT had expanded in Tromsø to include 40 tour
163 operators offering 48 guided tours, and in Alta (2012-2013) five tour operators and six guided
164 tours.

165 *Insert table 1 here*

166

167 Table One also shows the development of four types of NL tours; base camp visits, tours
168 by road/sea (also labelled 'pure' tours as they do not include other activities), tours with add-
169 ons (other activities such as dog sledding and snow-mobiling) and tours with overnight stays
170 and add-ons. The first season in Tromsø (2004-2005) tourists could buy base camp visits (also

171 meet/learn more about dogs, reindeer and Sami culture, and engage in activities such as kick
172 sledding, walks, snowshoeing and tobogganing). From 2007-2008 snowmobiling was offered,
173 and from the next season dog sledding, reindeer sledding and horse riding. From 2008-2009
174 'pure' motorised tours were introduced and this type of tour subsequently experienced the
175 biggest growth in number of products and producers. In Alta the product assortment has
176 remained consistent over the study period; base camp visits, dog sledding tours, snow mobile
177 safaris and outdoor hot tubbing in the town. In Alta, the motorised tours started in 2009-2010,
178 and a cruise was offered in one season.

179

180 Heimtun and Viken (2016) have suggested some explanations for the different
181 development paths of the two destinations: Tromsø is a bigger community with more
182 (tourism) facilities, easier national and international access, a local DMO (Destination
183 Tromsø until 2009, then Visit Tromsø) and a long tradition as a tourist destination; Tromsø is
184 hence a more known brand and has a more positive destination image in the market place.
185 Although, Alta was part of Finnmark Reiseliv's (regional DMO) winter project from 2002-
186 2010 this did not result in the same growth as Tromsø. Lack of a local DMO (Destination Alta
187 was closed down in 2001) and sporadic provision of tourist information in the winter over the
188 years has not helped matters.

189

190 Tromsø's success as a NL destination, however, really began in the winter of 2008-2009,
191 after the airing of the BBC documentary *Joanna Lumley: In the Land of the Northern Lights*.
192 This was an important driver for NLT, not only in Tromsø, but in Northern Norway more
193 generally. In this documentary Lumley experienced the lights in the Tromsø area, assisted by
194 a local tour operator. Consequently, numbers of international winter guest nights (December-
195 April) have grown; in Tromsø from 4,000 in 2005 to 50,000 in 2012 (40% from the UK); and
196 in Alta from 800 in 2005 to 4,000 in 2012 (mostly from the UK and Germany) (Statistikknett,
197 2014). These statistics, however, do not provide a complete picture as tours are offered from
198 October to April (the dark season). Hence, in Tromsø, it was estimated that 80,000 individual
199 NL tours were sold in the season 2014-2015 (Haugen, 2015). While Tromsø has a more
200 developed NLT sector, Alta's smaller scale and slower growth provides a useful comparative
201 aspect to the study, in terms of gauging how growth and competition may affect operators'
202 presentation of uncertainty.

203

204 4. Method

205

206 In this project, we drew upon grounded theory in order to identify textual strategies used
207 in the marketing of NLT in Tromsø and Alta regarding uncertainty (Charmaz, 2006). We
208 selected 17 brochures published by DMOs in Tromsø (seven brochures) and Finnmark (ten
209 brochures for Alta) from 2004 to 2014 (note we were unable to get access to four volumes
210 (see Table 1)). These brochures contained two types of written information; facts about the
211 destination and NL (written by the DMOs), and tour descriptions (203 in total, written by the
212 42 tour providers). As an introduction to the tours both DMOs produced standardised short
213 texts. The text on NL tours, written by the tour providers, comprised between 50 and 100
214 words in both destinations. All text was written without any professional guidance, according
215 to the DMO's.

216

217 In analysing the data, we used a modified version of grounded theory coding principles
218 (Charmaz, 2006). As our aim was not to construct a grounded theory from the data, the
219 modified version meant that the first initial coding was undertaken on text relevant to
220 understanding the rhetoric of uncertainty. The first step therefore involved careful reading of
221 all extant text about northern lights and northern lights tours in the brochures and then coding
222 content that described the uncertainty of the lights. This was done by using coding sheets that
223 mapped destination, year of publication, company and type of NL tour (Schreier, 2012). In
224 this phase the researcher mainly used *in vivo* codes (Charmaz, 2006), thus terms used in the
225 catalogues. After the open coding we conducted axial coding, specifying the 'properties of a
226 category' (Charmaz, 2006, p. 60). Based on the *in vivo* codes we identified seven key themes
227 around the communication of uncertainty. This part of the analysis was also undertaken
228 manually by one of the researchers who explored different ways to organise the codes into
229 categories, while still being able to clearly relate the codes and categories to the two
230 destinations and the four types of NL tours. The researcher did this by using coding sheets for
231 each key theme (Schreier, 2012). Here each line represented how the different companies
232 communicated uncertainty each year, in each location.

233

234 The study used one primary coder (an 'expert' with twenty years research experience in
235 Nordic tourism), but in order to address 'confirmability' i.e. that the study's interpretations
236 and conclusions are grounded in actual data that can be verified (Cresswell and Miller, 2000;
237 Golafshani, 2003; Given & Saumure, 2008), a secondary coder independently coded ('peer-

238 checked' (Cresswell, 2013)) a sample of the brochures. We also addressed what Krippendorff
239 (1980, pp. 130-132) identifies as 'stability' in content analysis i.e. the ability of a researcher
240 to code data the same way over time. This involved the primary coder revisiting the data
241 several months after the initial coding, to ensure that their coding was consistent with the
242 initial coding, ensuring 'intra-coder' reliability. These assessments of both inter and intra-
243 coder reliability suggest that the codes and subsequent themes identified are reliable measures
244 of the phenomenon under investigation. The findings are presented below thematically.
245

246 **5. Results**

247 *5.1 Communicating uncertainty*

248
249 We identified seven themes relating to the rhetoric of uncertainty around NLT; the
250 location; mobility; the guide; the tourist; serendipity; weather; and science. Of the 203 NL
251 tour descriptions only a relatively small number (29 in total) did *not* address issues of
252 uncertainty. This oversight was evident for all types of tours, however, was less frequent for
253 tours by road/sea and base camp visits. For instance, in some 30 per cent of the 'add on' tour
254 descriptions uncertainty was not mentioned at all. Moreover, in the season 2007-2008, none
255 of the five tour operators in Tromsø wrote about the possibility of NL failing to materialise,
256 thereby implicitly promising the tourists sightings this season. That season the descriptions
257 were very short and focused mostly on price, duration and other activities, however,
258 uncertainty was addressed by Destination Tromsø in the introduction to the tours and in the
259 Aurora fact section.

260 *5.1.1 Location*

261
262 Qualities of the location or place were embedded in the rhetoric of the DMOs and several
263 of the companies, thus linking place with certainty in the NL experience. For instance, in the
264 earlier brochures Finnmark Reiseliv claimed an historical connection to the NL by referring to
265 the '*world's first northern lights observatory*', and by arguing that this history gave Alta the
266 right to call itself '*The town of northern lights*'. In a similar vein Destination Tromsø claimed
267 that the town was '*one of the places on earth with the greatest amount of northern lights*
268 *activity*' and that '*our natural modesty prevents us from proclaiming Tromsø as the 'northern*
269 *lights capital of the world*'" (2004-2005). In later brochures, however, this strategy was

270 modified with ‘scientific’ or ‘factual’ information now emphasising the town’s location in the
271 middle of the Auroral zone.

272

273 At the operator level too, NLT companies linked place with certainty, ubiquitously
274 conveying the message that their products entailed taking the tourist to a ‘*perfect*’ or the ‘*best*’
275 location with ‘*no light pollution*’, ‘*no street lights*’ or ‘*no city lights*’. The promise of darkness
276 outside the town centre was thus used as a strategy for handling uncertainty, in particular in
277 Tromsø. Claims include the location offering ‘*undisturbed*’ or ‘*fabulous*’ views of the sky.
278 When tourism attractions are spatially discontinuous or uncertain, the first priority is to
279 reassure the market that *this* is the best location to experience the attraction. Thus on both a
280 macro (regional/destination) level and micro (operator/product) level, the special qualities of
281 location or place are cited to impart a sense of certainty around NL sightings.

282 5.1.2 Mobility

283

284 The significance of mobility was in particular expressed through the use of chase/chasing
285 and hunt/hunting in the tour descriptions and the tour titles. The notion of the ‘hunt’ for NL
286 was first used by a company in Alta (2006-2007) ‘*Hunting the Northern Lights*’. One
287 company in Tromsø, which offered the first tour by car (from 2008-2009), developed the
288 notion of the ‘chase’ to communicate the good chances of tourists seeing the NL. In the first
289 season this was expressed through the tour title ‘*Chasing the northern lights*’ with the
290 strapline ‘*Join the guide ... for a relentless chase by car to track down the northern lights*’.
291 Later, the tour title was changed to ‘*The Aurora Chaser...*’. For some companies the chase or
292 hunt entailed going ‘*even to the Finnish border*’, while to others it meant changing locations
293 several times during a tour, perhaps involving one or more camp sites. The notion that
294 mobility could increase the chances of experiencing the NL was also acknowledged by the
295 DMO in Tromsø which added a ‘northern lights-o-meter’ in 2013-2014 to each tour
296 description. This meter meant that ‘*with a full score, the guide will try to go wherever the*
297 *likeliness of seeing the lights is greatest*’.

298 5.1.3 Tour Guide

299

300 The tour guide’s competence and interest in finding NL were part of the rhetoric of a
301 number of NLT products, and in particular, tours by car or by sea. The descriptions of
302 products sought to reduce the uncertainty of NL sightings by communicating the guide’s
303 personal involvement thereby labelling him/her as ‘*enthusiast*’, ‘*persistent*’, ‘*dedicated*’, as

304 having *'a lifetime Aurora experience'* or as being on *'a mission'*. For instance, one of the
305 companies wrote: *'the most dedicated guide you can imagine! ... Never trust the northern*
306 *lights– but you can trust us. Whenever we have a real sighting, we “never” go home'*.

307

308 Moreover, the guides' formal qualifications are also mentioned e.g. *'professional guide'*,
309 *'qualified guide'* or *'authorised guide'*. In a few descriptions this knowledge was elaborated
310 on, for example the guide's knowledge of astronomy, or their familiarity with NL folklore.
311 While actually being able to find the NL was the paramount guiding skill portrayed, a
312 secondary, but highly relevant competence was the ability to assist tourists to take photos of
313 the northern lights. Hence some guides were presented as professional photographers who
314 would teach the tourists how to set up their cameras: *'Join our professional photographer in*
315 *the chase of the northern lights. Learn how to capture it all on camera'*. For such an
316 ephemeral attraction it is important for the tourist to be able to effectively 'capture' the
317 phenomenon.

318 5.1.4 Tourists

319

320 Although the rhetoric of NL tour descriptions was predominantly about the tourists' need
321 for guidance in finding the NL, such rhetoric also proposed that certain types of behaviour
322 from the customers might also contribute to increasing their chances of NL sightings. This
323 was first expressed by a company in Alta which offered base camp visits (2007-2008) and
324 from that year Visit Tromsø also suggested that tourists increased their chances of seeing NL
325 by staying out for a long time, and by being patient and dedicated; *'Don't give up too easily.*
326 *The patient and dedicated visitors are often rewarded!'* (the next season they even advised on
327 the correct clothing for being outside for a long time). One company introduced the notion of
328 *'the persistent Aurora watcher'*.

329

330 Through to the season 2009-2010 the main expected tourist behaviour was patience -
331 waiting. This was especially communicated for base camp visits, however, waiting was
332 increasingly suggested in a non-passive way, in that tourists would engage in other activities
333 until the NL appeared e.g. eating a (Sami) meal; interacting with animals (reindeer, huskies
334 and horses); sitting by the fire in the *lavvo* (Sami tent); and listening to stories about Sami
335 culture. Tobogganing and snowshoeing were also suggested. By the seasons 2011-2014 this
336 diversification (or distraction) approach was increasingly used, with other activities being
337 cleverly integrated, for example, one operator suggesting that snowshoeing was *'an excellent*

338 way to keep warm so you stay out longer and increase your chances of seeing the lights'. For
339 overnight stays this latter rhetoric was used as an argument for spending the night in a lavvo,
340 cabin, or snow cave; *'An overnight stay in a wooden lavvo ... increase the chances of seeing*
341 *the northern lights. Stay up as long as you like'*.

342 5.1.5 Serendipity

343

344 The notion of NL being elusive was part of the marketing language around uncertainty.
345 This was particularly the case in Alta, relating to many NLT products, mainly in the first two
346 seasons (2004-2006). Moreover, Visit Tromsø started their brochure from 2007-2008 by
347 stating *'The northern lights are unpredictable'*. Two companies offering dog sledding tours in
348 Alta used the terms *'possibility of'* and *'hoping to spot'* the NL. Three of the four companies
349 selling snowmobile tours here were also consistent in communicating uncertainty in rather
350 vague ways: *'can offer'* and *'lucky'* and *'may catch'* were used. Hope and luck were also part
351 of the tour descriptions of base camp visits in Tromsø, one company writing; *'... you will*
352 *hopefully see some sparkling northern lights'*. The uncertainty of NL sightings meant that no
353 guarantees could be granted, and this was stated by the DMOs; Finnmark Reiseliv in all
354 brochures from 2007 and Visit Tromsø from 2011. Just four tour operators followed suit with
355 this practice of providing a disclaimer. But one company followed up with the company's 'hit
356 rate' thus addressing both liability and uncertainty: *'we do not provide a northern lights*
357 *guarantee, but in the 2011/12 season we found the northern lights on about 90% of our*
358 *tours'*.

359 5.1.6 Weather & Climate

360

361 Mobility, location and the competence of the guide, as three factors in reducing the
362 uncertainty of NL sightings, were also communicated in close connection to climate and
363 weather conditions. Often the chase or the hunt was about the guide's ability to find *'clear*
364 *sky'*, *'openings in the sky'* or *'optimal weather'*. One company in Tromsø, for instance, wrote
365 *'If the conditions are good we stay at one spot ... When very cloudy we travel around to*
366 *different spots chasing the lights'*. Climatic conditions as a precondition of NL sightings was
367 also linked to places with an inland climate. For instance, Finnmark Reiseliv argued in all
368 brochures that *'The climate in Alta is dry and stable..., you have a good chance of spotting*
369 *the northern lights over the town.'* One company in Tromsø communicated that low

370 precipitation reduces the uncertainty of NL sightings: *'the trip takes you to one of the driest*
371 *places in Norway... increasing the chances of seeing the northern lights'*.

372 5.1.7 Science

373
374 The NL is a scientifically explainable natural phenomenon, which means that it is
375 possible, within limits, to forecast. But only the DMO Visit Tromsø used the medium of
376 science as a way of addressing the uncertainty of NLT, starting in the season 2007-2008. This
377 first season they pointed to the preconditions of solar activity and the relative position of the
378 earth, the latter meaning that Tromsø was situated in the Aurora zone in the evening. They
379 also suggested a website where tourists could check solar activity. The next season this DMO
380 elaborated on the solar activity by explaining that they were *'solar storms on the surface of*
381 *the sun'* and that NL are *'particles that are hurled into space after storms on the sun's*
382 *surface. They are attracted by the magnetic North Pole and enter the atmosphere in a ring-*
383 *like zone around the poles'*, where Tromsø is situated. In the final season, 2013-2014, they
384 introduced a quasi-scientific *'northern lights index'* (-meter) which indicated which type of
385 tour to take to reduce uncertainty.

386

387 6. Discussion

388

389 Using longitudinal data and a comparative approach, we analysed NLT organisations'
390 marketing communications - noted as being the most accessible way for tourism operators to
391 deal with risk (Boksberger and Craig Smith 2006). Seven approaches to addressing risk in the
392 supply of NLT were identified, which broadly align with three of the four strategies for
393 managing risk identified by Williams and Balaz (2015); knowledge, trust and diversification.
394 The enhanced importance of promotional material of NLT operators is highlighted in an
395 environment where normal supply chain risk management is not applicable. For NLT, the
396 findings suggest that as the competition has increased amongst operators and the NLT
397 industry has become more professional, addressing the element of risk has become more
398 sophisticated, from both operational and marketing perspectives. This study identifies a
399 number of strategies employed in the marketing communications of NLT operators that
400 include diversification, demonstrating mobility, modifying tourist behaviour, claims to
401 knowledge, and the scientification of addressing risk around the phenomenon.

402

403 The longitudinal nature of the research clearly identifies that this rhetoric has changed
404 from one that initially mainly focused only location – i.e. operating in/from the perfect place
405 with no light pollution, and/or with the best weather/climate - to one that now contains a
406 number of messages to allay the element of risk. Over time, the DMO, Visit Tromsø, has
407 arguably developed the most sophisticated approach to risk, from initially simplistic claims
408 about being the best place to see the NL, to the development of scientific or knowledge-based
409 rhetoric which progressively conveys messages about certainty of the Aurora being related to
410 qualities of the location, and to weather and climate. Employing ‘science’ and ‘fact’ in their
411 messages has been an emergent strategy. The promotional material through which operators
412 demonstrate their connection with science, provides an enhanced level of credibility that
413 addresses the inherent risk for the tourist. Notably, tourism operators have demonstrated their
414 connection with ‘science’ to not only improve their knowledge and operational capacity to
415 ‘predict’ the Aurora, but also to build a sense of trust with their potential clients. Science
416 means knowledge, which means predictability, and all are melded within promotional content
417 to reduce risk in the minds of the potential purchaser of the NLT product. These and other
418 claims to knowledge (e.g. we have the most knowledgeable and experienced guides) are
419 important ways that operators negotiate risk in their environment.

420
421 Typically, the use of knowledge to reduce risk for firms is associated with the firm itself
422 gaining knowledge of the product and market place (as noted by Williams and Balaz (2015)
423 risk begins where knowledge ends), but in the case of NLT, a recent approach has been for the
424 operator to promote the acquisition of knowledge by their *clients*, for example through
425 suggesting that they visit ‘scientific’ websites about solar activity, to enable them to then
426 make a risk-informed choice. Such suggestions along with the development of the ‘northern
427 lights-o-meter’ are good illustrations of the enhanced use of scientific and pseudo-scientific
428 knowledge to portray certainty rather than the risk of ‘missing out’. The latter could be called
429 an act of ‘scientification’, the gracing of a non-scientific process with an enhanced scientific
430 property. Both, however, are essentially mechanisms of transferring the risk from the
431 producers and the natural phenomenon to the tourists themselves and their choice of product
432 or operator.

433
434 Increasingly, too, operators have been conveying messages suggesting the appropriate
435 way for tourists to behave, in order to be successful i.e. exhibiting patience. This essentially
436 transfers some of the risk to the client (tourist). In an interesting juxtaposition of immobility

437 and mobility, while extolling the virtues of patience and waiting, the promotional rhetoric also
438 emphasizes the alertness, speed and readiness of the NLT operators, building trust in their
439 ability to chase down the Aurora.

440

441 Coupled with the above, and also reinforced through associated promotional messages,
442 has been diversification of activities, an established approach to addressing risk (Williams and
443 Balaz, 2015). A range of supplementary activities (e.g. sledding, snowshoeing, Sami cultural
444 activities), are ostensibly offered to enhance the visitor experience, but are primarily
445 distractions to alleviate the clients' long periods of waiting. But such a strategy also has the
446 benefit of adding value to the activity, providing a unique selling point for the operator and
447 potentially growing their income stream. Consequently, diversity of activities is an important
448 theme in the promotional material of many NLT operators.

449

450 Our longitudinal approach permitted us to observe differences among the marketing
451 messages of the DMOs and operators and between the two locations, Alta and Tromso, in
452 relation to risk and NLT, and also in how risk has been addressed within this material over the
453 ten-year period of NLT growth. There is a difference between the 'pure' NLT products and
454 those that provide a more diverse range of offerings. The former tended to rely, initially, upon
455 communicating serendipity around NL sightings, but have progressively developed rhetoric
456 around their guides' competencies, dedication and the importance of mobility. Collectively
457 these messages are aimed at promoting trust in the operator. But a somewhat contradictory
458 approach, latterly, employed by some operators, has been to include a disclaimer within their
459 promotional content. While such an approach may reduce transaction costs (and
460 dissatisfaction of the client if they do not see the NL) it may also have the negative
461 consequence of reducing trust (this may be counterbalanced, however, by operators' claims of
462 high success rates).

463

464 Linked to three of the themes discussed above (i.e. the expert role of the guide, mobility,
465 and serendipity) some operators, have developed a further approach, the metaphor of the
466 chase or the hunt, to mitigate risk. The emphasis on flexibility, skills and knowledge puts the
467 guide in charge of the hunt, with the tourists depicted as fellow chasers or hunters. In most
468 conceptualisations (e.g. Boksberger and Craig Smith 2006; Williams and Balaz 2015) risk is
469 something that needs to be minimised. In the case of the NLT operators above, it appears that
470 they are adopting a unique strategy of 'embracing' risk through the narrative of 'the hunt'.

471 The metaphor of the ‘hunt’ highlights the patient waiting, searching, exploration, watching
472 and chasing involved in NLT. The hunt narrative is also culturally appropriate in a setting
473 (rural Norway) that is renowned for and celebrates the hunt as an important part of life, which
474 in particular shapes rural men’s gender identity (Bye, 2003) (many of the owners/guides of
475 NLT are men who often engage in hunting and other types of *friluftsliv* (outdoor recreation)).
476 However, the narrative of the hunt has not only become apparent in the language of this type
477 of tourism in Northern Norway, but has been increasingly used in other NL destinations such
478 as Iceland, Finland, Sweden, Canada and Alaska. Hunting metaphors have thus become a
479 powerful rhetorical strategy for persuading tourists to participate in such a risky product.

480

481 Hunting involves teamwork and trust, and in a sense, the use of the chase or hunt
482 narrative is also related to the second firm strategy of trust (Williams and Balaz 2015).
483 However, trust in this sense has mainly been discussed in terms of reducing firm transaction
484 costs through developing trust based relationships with suppliers. We contend that the
485 narrative of the hunt and all this entails, serves to help build a relationship of trust between the
486 firm and the NL tourist (the ‘guide’ and the ‘hunter’), while also acknowledging the risk
487 around the aurora – and simultaneously this risk adds value to the NLT experience through
488 enhancing authenticity (Wang 1999; Hinch and Higham 2001).

489

490 **7. Conclusion**

491

492 Risk in supply is inherent in a range of tourism experiences, from Northern Lights
493 Tourism, to whale watching, to getting a good cup of coffee. This study advances our
494 understanding of risk in relation to the supply of tourism experiences based on temporally
495 and/or spatially discontinuous phenomena. Using a framework of risk, the study identifies
496 ways in which such risk has been mitigated by destination managers and by tourism
497 operators, using the case of Northern Lights Tourism in Norway.

498

499 For such products, the ‘lack of control’ (Williams and Balaz 2015) over the experience,
500 in this case the manifestation of the Aurora borealis, a celestial phenomenon, means that there
501 are limited strategies that operators can pursue to address risk in supply. Some ‘normal’
502 avenues that firms pursue to reduce risk, such as supply chain risk management, may not
503 apply. Of the four strategies for managing risk identified by Williams and Balaz (2015),
504 knowledge, trust and diversification are identified in this study. Our study has built upon this

505 work and has identified further strategies to mitigate risk. In particular, the study highlights
506 the importance of rhetorical approaches within the tourism promotional material of DMOs
507 and tourism operators. Collectively these rhetorical approaches seek to replace risk with
508 certainty in the minds of consumers. And while risk is generally seen as troublesome for
509 tourism operators, an alternative and concurrent approach identified in this case, has been
510 their careful embracing of risk through the narrative of the chase or hunt that seeks to bind the
511 tourist and operator in a trusting quest for an authentic tourism experience. In this sense, risk,
512 something that has generally been treated as the bane of the tourism industry, has been
513 reimaged or reconstructed, to the extent that it could now be seen as a positive, desirable (or
514 almost essential) element of the tourism product. A question arises however, about the
515 implicit tension that is generated when tourism operators employ strategies such as this that
516 simultaneously downplay yet celebrate risk for these temporally and/or spatially
517 discontinuous tourism products. How are such messages received and assimilated by tourists?
518

519 Future research may seek to explore how risk impacts upon visitor demand and
520 experience, and the extent to which marketing strategies such as those outlined above are
521 effective in mitigating perceptions of risk in the minds of tourists. Also of interest is how tour
522 guides manage the experience of tourists' who have high expectations of sightings, yet are
523 disappointed by their failure to observe an Aurora. Finally, there is a need to monitor the
524 development of northern lights tourism in terms of understanding the impact risk has upon the
525 sustainability of tourism businesses in the destinations.
526

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