

1 **The ‘good farmer’: farmer identities and the control of exotic livestock disease in England.**

2 **Abstract**

3 Exotic livestock disease outbreaks have the capacity to significantly impact individual livestock
4 keepers, as well as devastate an entire industry sector. However, there has been limited
5 research undertaken to understand how farmers think about and carry out exotic disease
6 control practices within the social sciences. Drawing on aspects of Social Identity Theory and
7 Self-Categorisation Theory, this paper explores how the ‘good farmer’ identity concept
8 influences farmers’ exotic livestock disease control practices. Using findings from an in-depth,
9 large-scale qualitative study with animal keepers and veterinarians, the paper identifies three
10 context specific and at times conflicting ‘good farmer’ identities. Additionally, a defensive
11 component is noted whereby farmers suggest an inability to carry out their role as a ‘good
12 farmer’ due to government failings, poor practice undertaken by ‘bad farmers’, as well as the
13 uncontrollable nature of exotic disease.

14 **Key words**

15 Good farmer, exotic livestock disease, social identity theory, biosecurity.

16 **Introduction**

17 The management of livestock disease is an essential aspect of good animal husbandry and
18 livestock production. Animal keepers routinely deal with endemic diseases through both
19 proactive and reactive control measures, including, for example, the implementation of animal
20 health plans, vaccination programmes and the treatment of illness with antibiotics. However,
21 the management of exotic livestock diseases is less routine, despite recent outbreaks of exotic
22 diseases in England, including Swine Fever (2000), Foot and Mouth Disease (FMD) (2001 and
23 2007), Bluetongue (2007) and Avian Influenza (most recently in 2015). Additionally, a warming
24 climate is increasing the risk of the introduction of other exotic diseases such as African Horse

25 Sickness (MacLachlan and Guthrie 2010). In order to manage and prevent exotic livestock
26 diseases, animal keepers are expected to carry out regular stock surveillance and implement a
27 range of biosecurity measures such as limiting and controlling farm visitors; cleaning and
28 disinfecting clothing, vehicles and buildings; and careful stock sourcing and isolation
29 procedures. Animal keepers are also expected to report any suspicion of exotic livestock
30 diseases promptly.

31 Exotic livestock diseases pose significant risks to the livestock industry and can be a significant
32 cost burden to the taxpayer in compensation paid to farmers. For example, £1.3 billion was
33 paid in compensation for animals that were slaughtered during the 2001 FMD outbreak
34 (Bourne 2002) and farmers faced an estimated £84 million in additional losses associated with
35 other costs such as the restocking of livestock and wages (Sharpley and Craven 2001). Despite
36 this significant cost burden, there has been limited research undertaken into how animal
37 keepers think about and manage exotic disease risk. Nonetheless, a number of useful studies
38 have explored the ways in which farmers understand issues around (mainly endemic) livestock
39 disease management, including biosecurity. For example, Enticott et al. (2012) distinguish
40 between 'localised' and 'population' strategies to encourage farmer uptake of biosecurity
41 practices, concluding that interventions which draw on locally situated practices and
42 knowledges of disease are more likely to have a positive impact on biosecurity behaviour.
43 Studies have also sought to explore the nature of animal disease governance, within an
44 increasingly neoliberal political environment. For example, Hinchcliffe and Ward (2014) note
45 the importance of situated knowledge practices rather than the promotion of a uniform
46 approach in encouraging the uptake of biosecurity. Hinchcliffe and Ward (2014) suggest that
47 farmers' understandings of biosecurity (or what they label 'making life safe') are complex and
48 may be threatened by conventional messaging from government which can often over-simplify
49 the skilled, situated practices that farmers must adopt to remain free of disease. At a time
50 when farmers are being encouraged to take a more active role in disease management

51 through the political framework of 'cost and responsibility sharing' (Garforth *et al.* 2013, Maye
52 *et al.* 2014), understanding farmers' biosecurity behaviour and the factors which are influential
53 is essential.

54 This paper draws on findings from a large qualitative study which explored animal keepers'
55 exotic disease control practices. The study included interviews with animal keepers who had
56 direct experience of exotic disease and also asked animal keepers with no direct experience to
57 consider their potential reactions to a range of exotic disease scenarios. The paper builds on
58 existing research in two main ways. Firstly, it addresses the under-researched area of exotic
59 livestock disease management which has been somewhat neglected by the social sciences.
60 Secondly, in conceptual terms, it draws on the notion of the 'good farmer' to explain how
61 farmer identities are likely to influence their livestock disease management behaviour. This
62 furthers work by Silvasti (2003), Burton (2004), Sutherland and Burton (2011) and others who
63 explore the role of farmer identity within the context of the adoption of new practices which
64 may contravene farmers' understanding of what being a 'good farmer' constitutes. This
65 conceptual framework is applied in this paper to the context of exotic disease management,
66 which has not been done previously.

67 **The 'good farmer'**

68 Researchers have explored the concept of the 'good farmer' to understand farmer attitudes
69 and behaviour. The concept has been mostly applied to understand farmers' conservationist
70 versus productionist identities (Silvasti 2003, Burton 2004, McGuire *et al.* 2013). For example,
71 Burton (2004) suggests that farmers may be reluctant to take up particular schemes (e.g. the
72 Community Forest scheme) or change their practices in any way that may undermine their
73 primary identity as producers of the nation's food. In short, studies around farmer identities
74 often conclude that *farmers want to farm*, potentially limiting efforts to influence uptake of

75 particular behaviours which may be considered to be at the side-lines of productive farming
76 (Allison 1996, Burgess *et al.* 2000).

77 Individuals' values have been found to influence what an animal keeper considers to be 'good'
78 or 'bad' practice. Tind Sorensen et al (2001) suggest that a farmer is faced by a wide variety of
79 concerns which are likely to shape their values. For example, a farmer must consider issues of
80 animal welfare, productivity, food safety, and impact on the environment. Certain issues are
81 likely to conflict with others. Tind Sorensen (2001) points out that the goal of providing high
82 welfare space for livestock may come into conflict with the goal of reaching a particular profit
83 margin. Such a system may also conflict with some aspects of disease control which can be
84 more manageable in intensive systems which offer less space to each animal. Te Velde et al.
85 (2002) identify a range of values held by keepers relating to animal welfare that shape
86 individual's understanding of what constitutes being a 'good farmer' in relation to managing
87 their livestock. These values include the following: animals should be treated well; they should
88 be provided food, drink and shelter; they should be kept under hygienic conditions; and they
89 should not be treated roughly. The authors also found that farmers often distanced
90 themselves from examples of poor practice, disassociating themselves from what they
91 considered to be particularly 'bad' production systems or animal welfare approaches.

92 An animal keeper's values are also likely to influence what they consider to be their own role
93 in managing exotic disease risk. In a study conducted by Garforth et al. (2013), a distinction
94 was made by animal keepers between the management of endemic and exotic diseases. Due
95 to the strategic nature of exotic disease management and the public goods associated with
96 control (e.g. sustainable and safe food supply), animal keepers were more likely to designate
97 responsibility for the exotic disease control to the government, while endemic disease control
98 was more often considered to be a shared responsibility. In relation to perceptions of
99 responsibility, Huddy (2001) suggests that although government and the public may expect all

100 animal keepers to maintain a certain level of biosecurity implementation, the norms of the
101 groups in which the keeper are positioned is likely to have a far greater influence. Therefore, if
102 the shared values held by the group suggest that responsibility for exotic disease control lies
103 with the government, messages from the government encouraging individual action may have
104 limited influence on behaviour. Studies exploring the uptake of biosecurity measures (to
105 address both endemic and exotic diseases), have shown that feelings of responsibility have a
106 strong influence on biosecurity implementation. For example, where farmers consider the
107 spread of a particular disease to be the fault of the government, reluctance to implement
108 disease control measures at the micro level have been found to be high (Gunn *et al.* 2008,
109 Maye, *et al.* 2014).

110 The literature suggests that individual and collective identities, together with the associated
111 values and norms, have an important influence on animal keepers' attitudes and behaviour.
112 This paper draws on the concept of the 'good farmer' to explore the role of identity within the
113 context of exotic livestock disease control. From a theoretical perspective, Social Identity
114 Theory (SIT) and Self-Categorisation Theory are used to further explore 'good farmer' identity.
115 These theoretical approaches are outlined in the following section.

116 **Social Identity Theory (SIT)**

117 During the 1970s and 1980s, SIT was developed by Taifel and Turner (Taifel 1970, Tajfel and
118 Turner 1979) to help understand intergroup behaviour. SIT addresses a limitation of the
119 Theory of Planned Behaviour which, despite having gained popular appeal in understanding
120 and interpreting individuals' behaviour, has been critiqued for being too focussed on
121 individuals, thereby neglecting the wider contexts in which attitudes are formed and behaviour
122 expressed. SIT suggests that an individual's self-identity is influenced by their status within
123 society, which in turn is strongly shaped by their social categorisation. SIT is therefore
124 furthered by Self-Categorisation Theory, which describes the circumstances under which an

125 individual will perceive groups of people, including themselves, as belonging to particular
126 social groups. Within the context of this study, such categorisations may include, for example,
127 'commercial' or 'hobby' keepers, 'cattle' or 'poultry' keepers, 'intensive' or 'extensive' farmers,
128 'good' or 'bad' farmers.

129 A number of attempts have been made to integrate SIT into the Theory of Planned Behaviour
130 (see, for example, Rise and Sheeran 2010, Fielding *et al.* 2011). In so doing, the link between
131 self-identity and behavioural norms has been emphasised. Fielding et al (2011) argue that the
132 norms of a particular group with which an individual identifies are likely to have a far greater
133 influence on behaviour than the expectations of others outside of the group. Empirical
134 evidence from other studies support this theory, including, for example, work on household
135 recycling and fitness behaviours (Terry and Hogg 1996, Terry *et al.* 1999).

136 The different roles and positions that an individual occupies help to form their personal
137 identity. However, each individual shares these identities with others. For example, an
138 individual is not the only cattle farmer, or the only small scale poultry keeper. Instead, these
139 personal identities are shared, making them also collective identities. The interaction between
140 personal and collective identities becomes salient when considering collective action, social
141 norms or feelings of responsibility to others with which an individual may identify. Fielding et
142 al (2011) point out that for the majority of the time, collective identities will remain latent.
143 However, changes in contextual circumstances may bring collective identities to the fore. For
144 example, a disease outbreak may lead individuals to more strongly demonstrate their
145 collective as well as individual identities. Where an animal keeper may suspect disease on their
146 farm, their individual identity as a 'good farmer' as well as their collective identity as a 'cattle
147 farmer', and the associated group norms and feelings of responsibility, may encourage the
148 keeper to report suspicion of disease quickly.

149 Self-Categorisation Theory suggests that an individual is more likely to act as a member of a
150 particular group, the stronger they identify with it (Ellemers *et al.* 1999). An individual will hold
151 a number of identities and the strength of a particular identity, influenced by a particular
152 context or event, is most likely to impact on their behaviour (Terry and Hogg 1996). If an
153 animal keeper does not associate with a particular identity (for example ‘cattle farmer’ or
154 ‘good farmer’) they may not behave in the same way as those who identify strongly with such
155 groups. For example, an animal keeper may recognise that the welfare of their animals may
156 have become neglected due to external pressures such as finances or personal health
157 problems and may therefore no longer consider themselves to be a ‘good farmer’ or even a
158 ‘farmer’ at all and may cease to conform with the social norms of behaviour associated with
159 that group. SIT is not without its critics (Rabbie *et al* 2006). For example, Huddy (2001) finds
160 that the theory fails to account for existence of identities acquired by choice (as opposed to
161 automatic membership/identity) or to account for how identities progress from weak to
162 strong. Such criticisms are valuable, but SIT, especially when combined with insights from
163 Social Categorisation Theory, can nevertheless provide a useful lens through which to explore
164 how farmer identity may influence exotic livestock disease control behaviour. The methods
165 adopted for the study are outlined in the following section.

166 **Methods**

167 This paper draws on data collected from 60 face-to-face interviews with animal keepers, 19
168 interviews with government and private veterinarians and eight focus groups attended by a
169 total of 60 animal keepers across England and conducted in early 2015. The primary research
170 was designed to inform the evidence for the Department for Food, Environment and Rural
171 Affairs’ (Defra) review of compensation payments for exotic livestock disease in England
172 (animal health and welfare policy is a devolved issue with Scotland, Wales and Northern
173 Ireland setting their own agendas). Study participants were selected from across four livestock

174 sectors (pig, poultry, cattle and sheep) and represented a wide range of systems (e.g.
175 intensive/extensive, upland/lowland, food/non-food). Of the 60 animal keepers interviewed,
176 50 were selected from existing databases held by Defra and had past experience of a
177 suspected or confirmed case of an exotic disease. The remaining animal keepers were
178 purposefully selected through industry gatekeepers and existing contacts to represent a broad
179 range of farm types, sizes and systems. The veterinary participants were also selected from
180 Defra databases identified as having been involved in the reporting or management of past
181 suspected or confirmed cases of exotic disease. Eleven of the vets were employed by the
182 Animal and Plant Health Agency (APHA) and eight were private vets.

183 The interviews lasted approximately one hour and asked participants to recall in detail their
184 routine disease management practices. Interviewees who had past exotic disease experience
185 were asked specifically to recall their actions during the suspected or confirmed outbreak. This
186 included the point at which they became concerned, who they contacted, the actions that they
187 undertook and the concerns and emotions that they experienced. A biographical narrative
188 approach was adopted which encouraged interviewees to speak freely and in detail about
189 their experiences, recognising the importance of wider social and environmental contexts
190 which influence how events are experienced and recollected (Rist 1994).

191 The sector specific focus groups were held in a range of geographical areas to ensure diversity
192 in attendees. Two focus groups were held for each sector (pigs, poultry, cattle and sheep). .
193 Focus groups lasted for approximately three hours and were facilitated by two experienced
194 social scientists. Attendees were self-selecting and were contacted via industry gatekeepers to
195 request attendance. All research participants were assured of anonymity and permission was
196 obtained to record the interviews and focus groups. All recordings were transcribed verbatim.

197 The interviews and focus group discussions centred on the potential role of compensation in
198 influencing animal keeper disease management behaviour. However, a key area of discussion

199 was the routine management practices adopted by animal keepers and the factors influencing
200 these practices, which forms the focus of this paper. Research participants were then asked to
201 consider how their disease management routines may differ in two different scenarios. The
202 scenarios focused on two alternative compensation systems: (1) a system based on penalties
203 for poor disease management practice; and (2) a system based on bonuses for good disease
204 management practice. The data were analysed using the qualitative software NVivo, following
205 a coding framework which was devised based on an initial reading of interview and focus
206 group transcripts to identify key themes and follow up meetings with all members of the
207 research team. Research team members were also asked to review the final coding of the
208 transcripts in order to ensure validity. The results from the data collection and analysis are
209 presented below.

210 **Results**

211 The study sought to establish animal keepers' routine animal welfare and disease control
212 practices and to explore how these might change in the event of an exotic disease outbreak.
213 Central to animal keeper responses was the concept of the 'good farmer'. Animal keepers
214 regularly described what they considered to be 'good stockmanship'. This differed significantly
215 across the livestock sectors.

216 **Defining the 'Good Farmer'**

217 Intensive keepers, particularly those in the poultry sector, spoke about specific flock health
218 indicators, including water intake and mortality rates. Such measures were regularly recorded
219 and considered to be essential in maintaining animal health:

220 "I think a very basic thing that everyone would do is you monitor your
221 mortality...everyone would do that...You then have water monitoring, so every day you

222 would read a water meter and graph that and the same with the egg feed" (Poultry
223 keeper focus group participant, ID31).

224 "The birds that we buy are bought with a predetermined set of specifications, a KPI
225 [Key Performance Indicators] to say that on day one it will weigh this, on day two it will
226 weigh this. So the growth can be graphed and the food conversion can be graphed"
227 (Poultry keeper focus group participant, ID33).

228 In comparison to the specific markers used by poultry keepers to monitor animal health,
229 keepers running extensive systems, particularly those within the cattle and sheep sectors,
230 described identifying illness or disease in their stock as an innate skill or instinct and often
231 found identifying signs of illness difficult to describe:

232 "I would hope it would be fair to say that most decent stockmen or livestock farmers
233 check their stock every day and if they aren't being checked every day then they
234 should be...the signs of good health are...for somebody sat in an office, it might be
235 difficult to understand because you're not going to be there with a sheet ticking things
236 off but you very quickly see if an animal is off colour and it's just something that you
237 know, you have that ability to do" (Cattle keeper focus group participant, ID1).

238 "You always know when something's not right, you know. They look happy and if not,
239 you've got problems" (Cattle keeper interviewee, ID28).

240 Although at times keepers found it difficult to describe exactly what constitutes good animal
241 welfare practices, livestock keepers often distinguished themselves from 'bad' farmers, who
242 they considered to be 'beyond help'. For example, during a focus group discussion, cattle
243 farmers were presented with scenario one, which described a situation whereby the level of
244 compensation would be reduced if the animal keeper was found to be undertaking 'poor
245 disease management practice' thus representing a penalty. Participants were asked whether

246 such an approach would help improve areas of poor practice. The following responses were
247 typical:

248 "Probably not, not if he's going to do poor practice, it's too late then" (Cattle keeper
249 focus group participant, ID6).

250 "He wouldn't realise it was poor practice in the first place" (Cattle keeper focus group
251 participant, ID1).

252 There was an assumption among research participants that all 'proper' animal keepers should
253 be routinely undertaking what they considered to be 'good practice'. When asked to reflect on
254 scenario two, a compensation system based on bonus payments for 'good disease
255 management practice', participants considered whether such incentives would have any
256 influence on exotic disease control practices. According to a commercial duck keeper:

257 "I think there should be an expectation that it should be done properly anyway, rather
258 than paying people extra. There should be an expectation that it should be done
259 properly and I think that if you are caring about your animals you would be doing it
260 anyway" (Poultry keeper interviewee, ID84).

261 Although distinctions were often made between 'good' and 'bad' practice, or more generally,
262 'good' and 'bad' farmers, research participants found defining a 'good farmer' difficult. For
263 example, during a face-to-face interview, when asked to describe what he meant by the term
264 'good farmer', a sheep keeper gave the following response:

265 "Anyone that has got good stock, proud of their stuff, proud job, if we didn't take pride
266 in it, we'd have nothing...the proud farmers are better farmers" (Sheep keeper
267 interviewee, ID85).

268 **Separation from 'the Other'**

269 While all animal keepers involved in the study were prepared to recognise that areas of poor
270 practice exist across all livestock sectors, pig and poultry keepers more regularly referred to
271 'poor farmers' as particular sub-sectors of the industry, most regularly referring to hobby
272 farmers. Cattle and sheep farmers were more defensive. For example:

273 "There's something like 1500 serious pig keepers...but there's like 30,000 people in the
274 country who keep pigs...Obviously, in an ideal world, I'd rather they didn't but the
275 world isn't ideal and I have to accept that other people have to exist in the world. I
276 think I have the right to expect that those people understand their obligations" (Pig
277 keeper interviewee, ID119).

278 "Taking into consideration the site that was affected with [Avian Influenza], on all four
279 sides of it were areas of land that they sold off to hobby farmers. They all had chicken
280 pens. One of them didn't even have a pen they just wandered, so from our point of
281 view, that's the biggest risk. It's like having a time bomb amongst your biosecurity. It
282 doesn't matter how much you control it on your land, it's how you control it on
283 neighbouring land" (Poultry keeper interviewee, ID3).

284 "Hobby farmers, they might feed kitchen scraps to their pigs. They might actually have
285 swine fever on the farm but nobody would necessarily know about it" (Pig keeper
286 focus group participant, ID53).

287 Poultry and pig keepers were more able to distance themselves from 'bad farmers' than those
288 in the cattle and sheep sectors, often categorising themselves as 'serious' or 'commercial'
289 farmers and others as 'hobby' farmers, while cattle and sheep keepers were less able to make
290 a clear distinction. As one poultry keeper pointed out:

291 "Think about other agricultural sectors, nobody usually has a pet cow and it's very rare
292 to have a pet sheep, whereas for the poultry industry, all of a sudden [hobby farming]
293 is a significant feature" (Poultry keeper interviewee, ID3).

294 While commercial keepers were keen to distinguish themselves from hobby farmers, hobby
295 farmers who were involved in the study did not make the same 'us' and 'them' distinction.

296 Additionally, when hobby farmers were asked to outline their routine animal welfare and
297 disease prevention practices, no obvious areas of poorer practice were encountered.

298 There appears to be a clearer line between commercial and hobby farmers within the poultry
299 industry, allowing keepers to identify with a defined sector of the industry. In comparison, for
300 cattle and sheep farmers in particular, the line is far more blurred. What constitutes a 'hobby'
301 cattle or sheep farmer is less clear. Instead of drawing a comparison between 'commercial'
302 and 'hobby' farmers within the cattle and sheep sectors, farmers belonging to these sectors
303 were more ready to distinguish themselves from 'dealers' and 'travellers' who they often
304 suggested were 'poorer' animal keepers, more likely to ignore or hide disease:

305 "The reporting wasn't a problem [during the 2001 FMD outbreak]...if you know there is
306 an outbreak, okay, reporting is pretty simple. But you get the odd dealer that will try it
307 on, we all know it happened...they were actually moving sheep around in order to get
308 the disease to get the compensation" (Sheep keeper interviewee, ID96).

309 "We have quite a large travelling fraternity around where [the disease] was first
310 diagnosed. They have got livestock and were shipping them out right, left and centre in
311 trailers and land rovers...none of them have been registered so nobody knows that
312 they actually exist so you don't know if [FMD] could have been hanging around in
313 some of that stock" (Cattle farmer interviewee, ID1).

314 In addition to identifying and distinguishing between different sub-sectors of the industry,
315 animal keepers also distanced themselves from disease risk management by apportioning
316 blame to the government. This was particularly evident among cattle keepers:

317 "I think we have a deep distrust of the government and a complete dissatisfaction and
318 complete dissolution with anything that the government either throws at us or tries to
319 will upon us" (Cattle keeper focus group participant, ID34).

320 "[Exotic disease] is the government's problem. They should sort it out and we should
321 be compensated properly" (Cattle keeper focus group participant, ID9).

322 With reference to the 2001 outbreak of FMD:

323 "The government took a long time in not closing the country down for seven days,
324 that's what did the damage. The one case would have stayed pretty local if they'd
325 stopped the first case; it took them seven days to close the country down" (Cattle
326 keeper focus group participant, ID8).

327 "Don't tell me the reporting was a problem. The reporting wasn't a problem, it was the
328 government that were the problem" (Sheep keeper interviewee, ID96).

329 Allocating blame to the government allowed farmers to distance themselves from having
330 responsibility for controlling the spread of the exotic disease. Further distancing themselves,
331 cattle keepers emphasised the uncontrollable nature of wind borne diseases such as FMD:

332 "We have no control over it, full stop, there is nothing we can do. It comes in on the
333 wind, it can come in with birds and I'm afraid we haven't got any control, whatever we
334 do; whatever we can do we can't control that one" (Cattle keeper focus group
335 participant, ID2).

336 While some animal keepers felt there was very little they could do to control exotic disease,
337 they explained that they would implement particular measures during an exotic disease
338 outbreak, despite low levels of confidence in the efficacy of implementation:

339 "It's not going to stop any disease outbreaks but it looks as if you're doing the best you
340 can do" (Cattle farmer focus group participant, ID2).

341 "We bolted down a disinfectant mat and kept that topped up [during the FMD
342 outbreak] but I think a lot of it is a feel good factor from our point of view because if
343 you were taken with foot-and-mouth you could have sat there hand on heart to your
344 partner and said 'I did my best'...I don't think anything made a difference, it just made
345 us feel better at the end of the day" (Cattle farmer focus group participant, ID1).

346 This attitude indicates a wish to portray the 'good farmer' identity to those both within and
347 outside of the livestock industry. While there was some doubt about the efficacy of
348 implementing biosecurity measures, feelings of responsibility to the industry to be a 'good
349 farmer' during an exotic disease outbreak were regularly encountered:

350 "There's a sense of ownership over [disease], and we've recognised that if we all run
351 around in the middle of an outbreak and make it worse, we won't have an industry. It
352 would be very easy to spread, and so we all have a sense of responsibility over that
353 and to protect what we've got" (Poultry keeper focus group participant, ID31).

354 "If you know there is disease around, your biosecurity improves somewhat. Yes,
355 definitely, you would be more vigilant. Because, you know, hopefully, as an industry,
356 farmers will think they're sort of in it together. You're protecting your own livelihood,
357 but at the same time you're very aware that what you're doing could be affecting
358 others" (Sheep keeper interviewee, ID96).

359 **Conflicting Identities**

360 The complexities of the ‘good farmer’ identity concept were evident in the various
361 responsibilities that the animal keepers recognised. In particular, there were conflicts at times
362 between a range of responsibilities, including responsibility for keepers’ own livelihoods,
363 responsibility for the welfare of their livestock and responsibility to other local livestock
364 keepers. These conflicts were clearly evidenced by the experiences of one commercial pig
365 keeper whose pigs were culled during the 2000 Swine Fever outbreak, despite being clear of
366 the disease. The keeper was informed by the then Ministry of Agriculture, Fisheries and Food
367 (MAFF) that his pigs would be culled as they were classed as a ‘dangerous contact’ due to the
368 farm’s proximity to other pig herds that had contracted the disease. Initially, the pig keeper
369 refused and requested that the case be taken to Judicial Review. However, the keeper was
370 informed that movement restrictions would remain on the farm and the local area until the
371 outcome of the review was known. The keeper recognised that this would delay the recovery
372 of the local pig industry in his area and allowed the cull to proceed:

373 “[The MAFF representative] said, ‘if we’re going for a judicial review, by the time they
374 tell you they’re going to kill the pigs, you will have to put the slaughter date back’. I
375 said, ‘the situation is, none of my mates are going to understand. We all know each
376 other, they’re not going to be very pleased with me’...I didn’t want to delay the
377 slaughter because you’re dealing with a community of pig farmers, who I know most of
378 them, and you’re telling them, ‘we aren’t going to get out of this problem because I’m
379 arguing over it’” (Pig keeper interviewee, ID122).

380 Another pig keeper whose herd was culled as they were considered to be a ‘dangerous
381 contact’ also demonstrated the complexities surrounding the ‘good farmer’ identity in relation
382 to maintaining animal welfare. In comparison to the case outlined above, this pig keeper
383 requested that his pigs be culled in order to end their suffering due to poor living conditions

384 brought about by a long period of movement restrictions during the 2000 Swine Fever
385 outbreak. The keeper's situation is demonstrated by the following quote:

386 "By the time we got to the middle of September...by then we'd been held up for
387 getting on for eight weeks...I can't stop the old girls giving birth...I rang the vet and said
388 'you need to get in touch with [MAFF], you need to persuade them that I am a
389 dangerous contact'...They never found [Swine Fever] here and I would have been
390 disappointed if they had found it because we were really strict about who was allowed
391 on. It wasn't a particularly easy decision; it's not a particularly nice thing" (Pig farmer
392 interviewee, ID119).

393 The results presented here have demonstrated the wide range of identities with which an
394 animal keeper may associate and their related practice-based complexities. The potential
395 implications of these findings are discussed below.

396 **Discussion and conclusion**

397 The results presented in the previous section demonstrate the complexities associated with
398 the identity of the 'good farmer' within the context of exotic livestock disease management.
399 Animal keepers clearly hold a number of individual and collective identities and the wider
400 context in which they are positioned is likely to have an important influence on which identity
401 or identities drive their behaviour. The role of social identity and self-categorisation has been
402 explored previously in terms of how it may shape the identity of an individual and influence
403 their behaviour. Taifel (1970) suggests, for instance, that an individual defines himself and
404 others based on his or her location within a system of social categories. An individual's
405 identity, and in particular their values, is therefore shaped by comparisons with other
406 categories of society.

407 This study sought to explore the concept of the ‘good farmer’ within the context of exotic
408 livestock disease management. In-depth analysis of the data collected for this study
409 emphasised the complexities associated with understanding exactly what a ‘good farmer’ is. In
410 relation to exotic disease control, a number of ‘good farmer’ identities were noted and
411 included: the ‘Good Stockman’ identity; the ‘Good Neighbouring Farmer’ identity; and the
412 ‘Good Public Facing Farmer’ identity. Each of these is likely to drive particular exotic disease
413 management behaviours. Farmers may associate with one or more of the three identities
414 alongside other personal and collective identities, each of which may become more latent or
415 salient depending on a particular context. Each of these identities is discussed in more detail
416 below.

417 • *The ‘Good Stockman’ identity.* Firstly, the ‘good stockman’ identity focused on the
418 health and welfare of the animals to which good stockmanship was central, often
419 described as innate, tacit knowledge, particularly among cattle and sheep keepers.
420 Identifying disease and reporting suspicions of disease quickly to prevent the spread of
421 disease was considered to be driven primarily by the ‘good stockman’ identity;
422 however, the complexities surrounding this were exemplified by the need to make
423 difficult decisions, including the culling of large numbers of animals on welfare
424 grounds. Additionally, where keepers undertaking poor practice could not be allocated
425 to a sub-group of the sector, research participants were more defensive of their
426 behaviour, blaming personal, financial and/or health reasons rather than allowing the
427 poor practice to be associated with the wider identity of the sector.

428 • *The ‘Good Neighbouring Farmer’ identity.* Secondly, the ‘good neighbouring farmer’
429 identity was also evident whereby animal keepers involved in this study regularly
430 voiced feelings of responsibility to local farmers, with whom many were well
431 acquainted, to prevent disease spread and resume business function as soon as

432 possible. The ‘good neighbouring farmer’ did not want to be judged poorly by other
433 local animal keepers or to cause unnecessary problems, particularly to those with
434 which the keeper identifies most closely (e.g. other local keepers in the sector).
435 Returning to Fielding et al’s (2011) work on social identity, animal keepers are likely to
436 relate to a number of identities, with certain identities becoming more salient
437 depending on a particular context. In relation to the pig keeper example outlined in
438 the results section, where the pig keeper eventually agreed to allow his pigs to be
439 culled, the farmers ‘good animal welfare’ identity was superseded by his ‘good
440 neighbouring farmer’ identity due to the unusual context in which he was positioned.

441 • *The ‘Good Public Facing Farmer’ identity.* Thirdly, moving on from the micro level,
442 research participants demonstrated the ‘good public facing farmer’ identity, whereby
443 animal keepers felt a responsibility to the wider industry to portray good disease
444 control practices during exotic disease outbreaks in order to maintain a positive
445 industry identity, despite voicing doubts about the efficacy of such measures. Research
446 participants were mainly only concerned about the portrayal of their own sector
447 rather than of animal keepers more generally, often distinguishing between sectors
448 and at times criticising the disease management practices of keepers in other livestock
449 sectors. For example:

450 “If you start at the biosecurity policy, I would say I would score, let’s say an
451 eight, against a sheep farmer who’d score one or two” (Pig keeper focus group
452 participant, ID49).

453 “The sheep people, let’s make no bones about it, they’re mucking about with
454 these bloody sheep, they’re going from one end of the country to the
455 other...and they’re all sort of laughing about it” (Cattle keeper interviewee,
456 ID81).

457 *Defending the ‘Good Farmer’ Identity*

458 The ‘good public facing farmer’ identity clearly exemplifies a defensive component which was
459 evident throughout the data. Research participants regularly made sense of their individual
460 and communal identities by rejecting the ‘other’. Turner (2006) argues that, in their search for
461 a positive identity, individuals will focus on areas of distinctiveness that positively differentiate
462 their social grouping from other categories of society. As demonstrated in the the results
463 section of this paper, animal keepers involved in this study regularly defined themselves as a
464 particular ‘type’ of animal keeper and made distinctions between themselves and others. The
465 most regularly encountered distinction was made between ‘commercial’ or ‘proper’ farmers
466 and ‘hobby’ farmers/keepers. This distinction is clearly value driven and linked to the wider
467 productionist ‘good farming’ logic discussed elsewhere (see, for example, Burton 2004). This
468 was referenced most often where the distinction between the groups was clear within the
469 livestock sector, which is particularly the case for poultry keepers. Where the distinction was
470 more fuzzy, other categorisations were differentiated, for example, commercial livestock
471 keepers referenced poor practice among ‘dealers’ and ‘travellers’ who they did not consider to
472 be ‘proper’ farmers. Animal keepers also differentiated between ‘farmers’ and ‘government’
473 who they regularly criticised for poor management of previous exotic disease outbreaks.
474 Where distinctions between categories of animal keepers were less clear, research participants
475 simply differentiated between what they defined to be ‘good’ or ‘bad’ farmers.

476 In order to protect the positive identity of the sector, research participants also regularly
477 apportioned blame for exotic disease spread elsewhere, most often to government but also to
478 the uncontrollable nature of exotic disease. For example, research participants often referred
479 to the spread of wind-borne pathogens as being completely outside of their control, thus
480 defending any lack of individual action. Accounts of bad exotic disease management by
481 government representatives were regularly encountered, as exemplified by quotes from

482 research participants reported in the results section, particularly in relation to FMD.

483 Experience is likely to have an influence on animal keepers' perceptions of the legitimacy of

484 the government to provide suitable guidance in relation to keepers' role in exotic disease

485 control. This study found that cattle and sheep keepers were often more negative in relation

486 to the government's role and the relevance of their policies and guidance. This may be related

487 to the significant exotic disease outbreaks experienced by the sectors in recent memory, in

488 particular the 2001 and 2007 FMD outbreaks. In both cases, research participants regularly

489 blamed the government's lack of decisive action or poor regulation for the spread of the exotic

490 disease and rarely apportioned any responsibility to livestock keepers themselves. In

491 comparison, livestock keepers from other sectors, particularly poultry were less likely to

492 portray the government in similarly negative terms. Across all sectors, emphasis was given to

493 the need for government responsibility for exotic disease control, especially in relation to

494 controlling borders. This has animal health policy implications in terms of farmer buy-in to a

495 cost and responsibility sharing compensation system between government and industry for

496 exotic disease management and warrants further exploration.

497 Poor relations with government and the apportioning of blame within the livestock disease

498 management context has been reported by others (see Hall *et al.* 2004, Heffernan *et al.* 2008).

499 Research participants also criticised the advice provided by government during exotic disease

500 outbreaks. In relation to Social Categorisation Theory and SIT, Fielding *et al* (2011) suggest that

501 relations between the in-group and the out-group may have an important influence on

502 whether in-group members decide to carry out a particular behaviour being promoted by the

503 out-group. The salience of messages communicated by those perceived as outside of the group

504 is likely to be strongly influenced by the extent to which the situation is considered to be

505 characterised by an 'us' and 'them' mentality. As Fielding *et al* (2011) state, there is significant

506 research that suggests that messages coming from outside of the group are less likely to be

507 trusted and there is likely to be more resistance to criticism from outgroup members.

508 Additionally, where the greater power or status of the outgroup is perceived by in-group
509 members to be illegitimate, in-group members may resist or undermine messages
510 communicated by the outgroup. Fielding et al (2011) suggest that failing to follow guidelines or
511 recommendations can be one way by which in-group members can register their resistance
512 against the outgroup. Understanding an individual's or group's identity may therefore have an
513 important influence on how messages from government or others outside of the group
514 communicate messages and encourage particular behaviours. For example, messages to
515 encourage good routine disease surveillance practices and early reporting of disease suspicion
516 may be framed to appeal to animal keepers' 'good stockman' identity. In comparison,
517 messages to encourage heightened biosecurity practices during an exotic disease outbreak
518 may be best framed to appeal to animal keepers' 'good public facing farmer' identity.

519 This study has demonstrated the complexities associated with the identity of the 'good
520 farmer'. Animal keeper practices are likely to be influenced by what they understand to be
521 their individual identity as a 'good farmer' as well as their collective identities as perceived by
522 those within the sector, as well as the perceptions of those outside. Although SIT and Self
523 Categorisation Theory have provided a useful lens through which to consider the findings from
524 this study, it is worth noting some limitations. First, SIT often assumes the existence of fixed
525 groups with clear boundaries; however, this study has shown that group identity occurs on a
526 continuum and is fluid and context dependent. Farmers may identify more strongly with a
527 particular group during times of crisis or may similarly distance themselves from a particular
528 group with which they may otherwise identify. Such shifts are difficult to predict and may
529 occur quickly. Second, limited research has been undertaken within the context of SIT to
530 explore the extent to which particular personality traits may influence the extent to which an
531 individual may seek to ascribe to particular group identities. This study has shown that feelings
532 of responsibility may influence identity. Further research would be beneficial here in relation
533 to what drives certain farmers to have stronger feelings of responsibility than others. Third,

534 the findings from this study have emphasised the difference between ascribed and acquired
535 identity. Ascribed identities such as being a beef farmer or a hobby farmer may have little
536 influence on a farmer's behaviour compared to an identity that a farmer acquires, or perhaps
537 even aspires to, brought about by a certain set of circumstances (e.g. good public facing farmer
538 identity). These complexities emphasise the difficulties associated with predicting or assigning
539 group identities.

540 This study has shown that the 'good farmer' identity within the context of exotic disease
541 management is not simply confined to behaviour and values associated with good
542 stockmanship, as outlined by Te Velde et al (2002), but is instead complex and context specific,
543 incorporating identities which account for responsibilities to other farmers and the industry
544 more generally. The findings presented therefore contribute to the further development of the
545 'good farmer' identity concepts and its constituents by outlining the factors that farmers
546 perceive as threatening their ability to effectively carry out their 'good farmer' identity in
547 relation to exotic disease management. These include uncontrollable factors such as weather,
548 as well as the behaviour of others, including the government and specific groups such as hobby
549 farmers, dealers or travellers. This defensive component is likely to influence the farmer's
550 perceptions in relation to their own role in disease control and the roles of others. The farmer
551 identities outlined by this study are specific to the context of exotic disease control in England.
552 While some of the findings may be relevant elsewhere, it is likely that other identities may be
553 more salient in other geographical contexts with different exotic disease histories. For
554 example, the defensive component which has been identified here may be less discernible in a
555 country where there has been limited experience of exotic disease and/or where recent
556 outbreaks have been brought under control quickly. In order to understand and potentially
557 influence behaviour, it is important that the range of farmer identities are recognised within
558 the particular context of interest and used to inform policy approaches to understand and
559 influence exotic disease management behaviours.

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