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Attributional Consensus: The Importance of Agreement over Causes for Team Performance to
Interpersonal Outcomes and Performance

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Accepted refereed manuscript of:

Murray RM, Coffee P, Eklund RC & Arthur CA (2019) Attributional consensus: The importance of agreement over causes for team performance to interpersonal outcomes and performance. *Psychology of Sport and Exercise*, 43, pp. 219-225.

DOI: <https://doi.org/10.1016/j.psychsport.2019.03.001>

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24 Abstract

25 *Objectives:* Investigate (a) the effects of attributional consensus on interpersonal outcomes and
26 performance, (b) the effects of attribution type (i.e., adaptive/maladaptive) on performance, and
27 (c) the interactive effects between attributional consensus and attribution type on performance.

28 *Design:* Across two studies (i.e., vignette and behavioural experiments), independent samples t-
29 tests were used to examine the main effects of attributional consensus on interpersonal outcomes.
30 A 2 (attributional consensus: high, low) x 2 (attribution type: adaptive, maladaptive) x 2 (time:
31 pre, post) ANOVA with repeated measures on the last factor was used to analyse the main and
32 interaction effects of attributional consensus and attribution type on performance.

33 *Method:* In Study 1, participants ($N = 100$) read a vignette describing a hypothetical situation in
34 which they and their partner agreed or disagreed over an adaptive or maladaptive attribution.
35 They then completed measures of conflict and cohesion. In Study 2, participants ($N = 56$)
36 completed an experiment in which they performed a dart throwing task with a partner (a
37 confederate) and were subsequently told they failed the task. After selecting an adaptive or
38 maladaptive attribution, the confederate then agreed or disagreed with the participant. Measures
39 of conflict, cohesion, social identity, and performance were then taken.

40 *Results:* High attributional consensus led to lower levels of conflict and higher levels of cohesion
41 and social identity. Further, regardless of attribution type, high attributional consensus led to
42 better performance.

43 *Conclusion:* Overall the results provide evidence for the positive effects of high attributional
44 consensus on interpersonal and performance outcomes.

45 *Keywords:* Team-referent attributions, Disagree, Adaptive, Maladaptive

46 Attributional Consensus: The Importance of Agreement over Causes for Team Performance to
47 Interpersonal Outcomes and Performance

48 Team-referent attributions are individual team members' explanations for why
49 team/group outcomes occurred (Allen, Coffee, & Greenlees, 2012). Researchers studying
50 attributions have observed associations between team-referent attributions and sport outcomes
51 (Allen, Jones, & Sheffield, 2009; Coffee, Greenlees, & Allen, 2015; Dithurbide, Sullivan, &
52 Chow, 2009). Specifically, through experimental designs, researchers have observed the causal
53 effects of attributions on cognitive, affective, and behavioural outcomes (Le Foll, Rasclé, &
54 Higgins, 2008; Rasclé et al., 2015; Rees et al., 2013) and these effects are believed to be
55 generalizable at the team level (Allen et al., 2012). However, within a team setting, the presence
56 of teammates' attributions might impact these relationships. In accordance with attribution
57 theory (Kelley, 1967), this might be because individuals seek consensus information during the
58 attribution process. That is, by seeking consensus information, people aim to comprehend others'
59 attributions to understand if they explained the same outcome in the same way. Therefore, while
60 attribution studies have provided a good understanding of the effects of attributions, researchers
61 have not accounted for the influence that teammates can have on the attribution process. The
62 current study was designed to examine the effect of teammates agreeing or disagreeing over
63 team-referent attributions (i.e., attributional consensus) on the attribution process. Attributional
64 consensus between teammates likely lies on a continuum between complete agreement to
65 complete disagreement; this study was designed to examine the interpersonal and behavioural
66 consequences of teammates diverging along this continuum and finding themselves at opposite
67 ends of this attributional consensus spectrum.

68 **Attributional Consensus**

69 Individuals working collectively to achieve a common goal, as is the case in sport teams,
70 are likely to agree and disagree on issues pertinent to collective performances (Jehn & Mannix,
71 2001). According to the actor-observer bias/asymmetry, actors (individuals) have a propensity to
72 attribute their own behaviour to situational characteristics, while observers (others) tend to
73 explain the same behaviour through an actor's personal disposition (Jones & Nisbett, 1971). The
74 concept underpinning this is that attributions are a product of personal perspectives, and these
75 perspectives can vary between individuals. For example, an athlete might believe his team lost
76 due to a poor effort, while a teammate could believe the same loss was due to a lack of ability.
77 These diverging perspectives exemplify how individuals within a team may derive different
78 causes to explain a collective performance (i.e., low attributional consensus). Consequently,
79 disagreement is an inevitable part of group involvement.

80 Low attributional consensus between group members can lead to negative outcomes such
81 as intra-group conflict (Mitchell, 2018). Although disagreement and conflict may often be
82 perceived as synonymous with one other, researchers in social and sport psychology suggest that
83 disagreement between team members is a precursor to intra-team conflict (Barki & Hartwick,
84 2004; Paradis, Carron, & Martin, 2014). Among sport teams, disagreement that leads to conflict
85 is generally perceived to be negative, as conflict is often associated with negative group
86 outcomes such as experiences of negative emotions and disruption of collective goals (Barki &
87 Hartwick, 2004). Disagreement between team members, however, can also be perceived as a
88 healthy and a potentially important aspect of team dynamics (Goncalo & Duguid, 2008). Thus,
89 the extent to which disagreement in the form of low attributional consensus causes conflict
90 among teammates warrants examination.

91 On the other hand, agreement between team members during the attribution process (i.e.,

92 high attributional consensus) may facilitate positive intra-group effects. For example, in coach-
93 athlete dyads, those who tend to agree more often report greater feelings of trust and friendship
94 with one another (Jackson, Dimmock, Gucciardi, & Grove, 2011), and these relationships are
95 indicative of cohesive teams (Mach, Dolan, & Tzafrir, 2010). Researchers have demonstrated a
96 positive association between agreement within teams and perceived cohesion (Carron et al.,
97 2003). Thus, team members who believe their team is cohesive, may perceive this cohesion to be
98 a product of agreement over important team processes such as team-referent attributions. This
99 relationship is akin to the process of consensualisation regarding social identity. The process of
100 consensualisation can occur when individuals who agree with one another are more likely to feel
101 a stronger sense of shared identity (Postmes, Haslam, & Swaab, 2005). That is, the process of
102 agreement facilitates a stronger sense of attachment to the group among individuals, and in turn
103 they define themselves from their connection with their group (Tajfel, 1982). In short,
104 individuals tend to feel more cohesive and share a social identity with others who agree with
105 them.

106 This is likely a reciprocal relationship as social identity often influences the decision-
107 making process within teams (Postmes et al., 2005). Therefore, the effect of agreement or
108 disagreement over attributions on social identity and cohesion is difficult to empirically examine
109 as agreement is likely influenced by existing levels of social identity and cohesion. As a starting
110 point, the current research is designed to examine these relationships in newly formed groups,
111 thereby, restricting the possibility of existing levels of social identity and cohesion impacting the
112 effect of attributional consensus on outcomes.

113 **Attribution Dimensions**

114 Traditionally, attributions are examined at the dimensional level (Rees, Ingledew, &

115 Hardy, 2005; Weiner, 1985). This means, when measuring attributions, the way in which
116 individuals appraise their attributions is of importance. For example, an individual who attributes
117 an unsuccessful performance to a lack of ability may believe this cause is something that is
118 uncontrollable and unlikely to change in the future (stable). However, this same attribution could
119 also be believed to be something that can be controlled through practice, and therefore can
120 change in the future (unstable). Through this dimensional structure, Rees and colleagues theorize
121 that attributions can be assessed on perceptions of controllability (the extent to which a cause is
122 perceived as controllable or uncontrollable), stability (the extent to which a cause is perceived as
123 stable or variable over time), globality (the extent to which a cause is perceived to affect a wide
124 or narrow range of situations), and universality (the extent to which a cause is perceived as
125 common or unique to all people/teams).

126 Generally, athletes who attribute an unsuccessful performance to causes that are
127 controllable and likely to change in the future are said to have adaptive attributions (controllable
128 and unstable), while those who attribute an unsuccessful performance to causes that are
129 uncontrollable and unlikely to change in the future are said to have maladaptive attributions
130 (Rees et al., 2005). The type of attribution (i.e., adaptive or maladaptive) an individual adopts is
131 believed to impact important sport outcomes (Rees et al., 2005). Those who adopt, when
132 possible, adaptive attributions are more likely to persist in a challenging task (Le Foll et al.,
133 2008; Rasclé et al., 2015), be more confident (Coffee et al., 2015; Coffee & Rees, 2009), and
134 ultimately perform better in a subsequent sport performance task (Rees et al., 2013). However,
135 minimal research exists that has examined the influence teammates have on these attribution-
136 outcome relationships.

137 **Attributional Consensus and Performance**

138 Teammates may have a strong influence on the attributional process. For example, in
139 work groups, disagreement between teammates impaired group performance (van Woerkom &
140 Sanders, 2010), which in turn had deleterious effects on individual performance. In terms of
141 attributions in sport, the effects of disagreement with teammates may be dependent on the
142 content of the athlete's attribution. For example, confirmation bias suggests that individuals will
143 seek out information that supports their existing belief (Jonas, Schulz-Hardt, Frey, & Thelen,
144 2001). Therefore, a teammate agreeing with an adaptive or maladaptive attribution should
145 reaffirm an individual's belief, increasing or decreasing performance respectively.

146 **Current Studies**

147 Within this paper, two studies are detailed that were designed to examine the effect of
148 attributional consensus between teammates. To do this, an approach similar to that of previous
149 attribution studies (Le Foll et al., 2008; Rascle et al., 2015) was adopted, in that attributions after
150 failure were analysed on a spectrum from adaptive (i.e., controllable and unstable) to
151 maladaptive (i.e., uncontrollable and stable). High attributional consensus was operationalised as
152 convergence on one end of the spectrum (i.e., adaptive-adaptive, maladaptive-maladaptive) while
153 low attributional consensus was operationalised as a divergence toward opposite ends of the
154 spectrum (i.e., adaptive-maladaptive, maladaptive-adaptive). This approach was adopted to
155 explore if high or low attributional consensus influenced perceptions of interpersonal outcomes
156 and objective performance.

157 Although an attribution dimensional approach was adopted, unlike previous attribution
158 experiments (Le Foll et al., 2008; Rascle et al., 2015), the main purpose of these studies was to
159 explore the effects of attributional consensus on interpersonal outcomes. As such, whether
160 participants adopted an adaptive or maladaptive attribution was not expected to impact the

161 interpersonal relationship with their teammate. In other words, adaptive and maladaptive
162 attributions were used as a mechanism to facilitate unambiguous agreement or disagreement
163 between the participant and the confederate. Therefore, no specific hypotheses regarding the
164 effect of adaptive and maladaptive attributions on interpersonal outcomes were tested. However,
165 because researchers have demonstrated the effect of adaptive/maladaptive attributions on
166 subsequent performance (Rees et al., 2013), the effect of these conditions on performance were
167 tested.

168 Dyadic teams were used to investigate the effect of attributional consensus and attribution
169 type on interpersonal outcomes and performance. Moreland (2010) argues that individuals'
170 experiences in dyads are conceptually different from individuals' experiences in groups. This is
171 to some extent true, yet Williams (2010) argues that, in most cases, dyads are groups as they
172 share the same principles and processes of larger groups. Within the current studies, dyads were
173 considered to be groups as, consistent with William's argument, the dyads engaged in behaviours
174 and processes that paralleled that of larger groups. That is, dyads worked to achieve a collective
175 outcome.

176 In Study 1 a vignette design was used to explore the possible effects of attributional
177 consensus on relational outcomes of conflict and cohesion. Specifically, it was predicted that
178 those in the low attributional consensus condition would report more conflict and less cohesion
179 than those in the high attributional consensus condition (Hypothesis 1a).

180 **Study 1**

181 **Method**

182 **Participants and design.** Based on Coffee, Rees, and Haslam (2009), who used a
183 vignette study to analyse the effects of attributions, a moderate effect size was used to calculate

184 power. Power calculations revealed a 95% chance of detecting a moderate effect $d = .65$, with a
185 sample of 104 individuals.

186 After three individuals were removed for failing the screening questions, a final online
187 sample of 56 men and 44 women tennis players was used ($N = 100$, $M_{\text{age}} = 21.56$, $SD = 5.12$).
188 Tennis players were sampled as tennis is often played in a doubles format. The study adopted a 2
189 (attributional consensus: low, high) x 2 (attribution type: adaptive, maladaptive) factor design.
190 Participants were recruited through tennis clubs' web pages. To ensure participants played tennis
191 and they could fully and vividly imagine the situation after exposure to the vignette, they were
192 asked two screening questions: 1) "At what level do you play tennis?" and 2) "How well were
193 you able to imagine the scenario?" As previously mentioned, three individuals failed the
194 screening questions by answering not at all for either one or both questions and were
195 subsequently removed from the analysis. The remaining 100 individuals (25 per condition)
196 competed at various levels (recreational: $n = 21$, club: $n = 56$, national: $n = 19$, international: $n =$
197 4) and could moderately ($n = 70$) or vividly ($n = 30$) imagine the scenario.

198 **Procedure.** Approval for the study was granted through a university's research ethics
199 board. Those agreeing to participate in the study clicked a link taking them to an informed
200 consent page. Once participants provided consent, they were asked to complete brief
201 demographic items assessing participants' gender and age. They then read the following
202 vignette:

203 You are competing in a tennis doubles competition with a partner of similar ability
204 who you have never met. In this competition, you and your partner (the team)
205 perform very poorly and fail.

206 Half of participants then read a situation in which they and their partner disagreed on an adaptive

207 [or maladaptive] attribution.

208 You think the main reason the team failed is due to a poor strategy [the difficulty of
209 the task]. This is something that the team can[not] control and something that does
210 [not] change over time. However, your partner disagrees with you and thinks the
211 main reason the team failed is due to the difficulty of the task [a poor strategy]. This
212 is something that the team cannot [can] control and something that does not [does]
213 change over time.

214 The other half of participants read a situation in which they and their partner agreed on an
215 adaptive [or maladaptive] attribution.

216 You and your partner agree that the main reason the team failed is due to a poor
217 strategy [the difficulty of the task]. This is something that the team can[not] control
218 and something that does [not] change over time.

219 Participants then completed items measuring perceptions of conflict and cohesion.

220 **Measures.** Single item measures were used to assess perceptions of conflict and
221 cohesion. Due to the exploratory nature of this vignette study, and the use of single item
222 measures in previous social psychology studies (Postmes, Haslam, & Jans, 2013), these items
223 were deemed to be appropriate. Participants were asked to rate the extent they believed they and
224 their partner would likely experience conflict and cohesion. These were rated on a scale from 1
225 (*not at all*) to 5 (*completely*).

226 **Results**

227 Independent samples *t*-tests were used to analyse how agreeing (i.e., high consensus) or
228 disagreeing (i.e., low consensus) on attributions affected perceptions of conflict and cohesion.
229 There were no obvious violations of assumptions as dependent variables appeared normally

230 distributed and Levene's test for equality of variances was not significant, $ps > .38$.

231 **Conflict.** Those in the low attributional consensus condition reported significantly greater
232 levels of conflict, $M = 2.92$, $SD = 1.01$, compared to those in the high attributional consensus
233 condition, $M = 2.38$, $SD = .83$, $t_{98} = 2.93$, $p = .004$, $d = .59$.

234 **Cohesion.** Those in the low attributional consensus condition reported significantly lower
235 levels of cohesion, $M = 2.70$, $SD = .95$, compared to those in the high attributional consensus
236 condition, $M = 3.12$, $SD = .94$, $t_{98} = 2.22$, $p = .029$, $d = .45$.

237 **Study 1 Discussion**

238 These results provide initial support for the effects of attributional consensus on
239 interpersonal outcomes. Specifically, these results are consistent with previous research (e.g.,
240 Barki & Hartwick, 2004; Pescosolido & Saavedra, 2012) as disagreement appears to be
241 associated with interpersonal conflict and agreement appears to be associated with perceptions of
242 cohesion. However, the generalisability of the results are limited. First, the study only targeted
243 tennis players. This may raise questions regarding the effects of attributional consensus in other
244 settings. Second, the study examined how participants' perceptions of interpersonal outcomes are
245 influenced by a hypothetical situation. Such a design does not provide a good setting to examine
246 behavioural outcomes like performance or outcomes that emerge through behavioural interaction
247 like social identity. Therefore, the purpose of Study 2 was two-fold. First, Study 2 was designed
248 to replicate the effects found in Study 1 through a controlled behavioural experiment. Second,
249 Study 2 was designed to build on Study 1 by examining the main effects of attributional
250 consensus on social identity, as well as the main and interactive effects of attributional consensus
251 and attribution type on objective performance.

252 In Study 2 it was predicted that those in the low attributional consensus condition would

253 report weaker social identity and perform worse compared to those in the high attributional
254 consensus condition (Hypothesis 1b). Further, it was predicted that participants who adopted an
255 adaptive attribution would perform better compared to those who adopted a maladaptive
256 attribution (Hypothesis 2). Finally, an interaction effect between adaptive/maladaptive
257 attributions and attributional consensus was predicted (Hypothesis 3). Specifically, it was
258 predicted that participants would perform better when their teammate agreed with their adaptive
259 attribution compared to when their teammate agreed with their maladaptive attribution or
260 disagreed with their adaptive or maladaptive attribution.

261 **Study 2**

262 **Method**

263 **Participants.** Rascle et al. (2015) and Rees et al. (2013) observed large effect sizes when
264 examining the effects of attributions on behaviour. Power calculations revealed that to detect a
265 large effect size ($\eta_p^2 = .30$), a sample of 52 individuals was needed. Two participants did not
266 complete the study as they failed a manipulation check. This left a final sample of 24 men and 32
267 women who were students at a university in the UK ($N = 56$, $M_{\text{age}} = 23.86$, $SD = 6.42$). On a
268 scale from 1 (*no experience*) to 10 (*a lot of experience*) participants reported little dart throwing
269 experience ($M = 2.62$, $SD = 1.91$).

270 **Materials.** A regulation size dart board was mounted 1.73 meters from the bull's-eye to
271 the ground (the regulation dart throwing height) and participants threw from 2.37 meters (the
272 regulation dart throwing distance). This distance was marked out by a line on the floor. These
273 materials and distances are consistent with the materials and distances used in Rascle et al.
274 (2015). During each performance, a visual shield was in place to ensure the non-performer was
275 not able to see their teammate's score.

276 **Measures.**

277 *Conflict and cohesion.* The measures of conflict and cohesion used in Study 1 were also
278 used in Study 2.

279 *Social identity.* To examine the effect of attributional consensus on social identity,
280 participants completed the Single Item Social Identity Scale (SISI) (Postmes et al., 2013). The
281 SISI asks participants to report the extent to which they agree with the statement “I identify with
282 [target group]” on a 7-point scale ranging from 1 (*completely disagree*) to 7 (*completely agree*).
283 In this study, “target group” was replaced with “my team”.

284 *Performance.* To measure performance, participants completed two rounds of a dart
285 throwing task (pre-manipulation and post-manipulation). The dart board was divided into 10
286 sections in concentric circles ranging from 1 (around the outside) to 10 (bull’s-eye), with higher
287 scores corresponding to a better performance. Each round participants threw six darts. Higher
288 scores corresponded with those who threw their darts closer to the middle of the dartboard.
289 Participants who missed the dartboard completely were given a score of zero for that throw.

290 *Manipulation checks.* To ensure participants perceived their performance as a failure and
291 understood the manipulation, they were asked to circle a) whether their performance was “rather
292 like a success” or “rather like a failure” and b) which paragraph they selected and which
293 paragraph their teammate (the confederate) selected. After the experiment participants were
294 asked whether they were aware of the true purpose of the study.

295 **Procedure.** Ethical approval for the study was granted by a university’s research ethics
296 board. A participant and the confederate entered the laboratory and were provided details
297 regarding the nature of the study. They then completed an informed consent form and were
298 notified that they would be completing a dart throwing task together as part of a team. They were

299 given a collective target score of 90 with 12 darts and were informed that they would each throw
300 six darts¹. Once the participant and confederate indicated they understood the task, the researcher
301 informed them that the participant would perform first. The researcher then instructed the
302 confederate to stand behind a visual shield so the teammate's performance was visible but the
303 score (dartboard) was not visible. After the participant threw six darts and the scores were
304 recorded and the darts removed, the participant and confederate switched positions and the
305 confederate threw six darts. Subsequently, the researcher informed them that, as a team, they did
306 not reach the target score of 90 and thus had failed the task.

307 Participants were then asked to read two paragraphs describing (1) an adaptive attribution
308 and (2) a maladaptive attribution (e.g., Rascle et al., 2015) and asked to circle the paragraph they
309 believed best described the causes of their team performance. The researcher then prompted
310 participants to verbally state which attribution they selected. This self-selection procedure was
311 reinforced as the researcher reminded them that they chose an attribution that was
312 [un]controllable and [un]likely to change. To manipulate attributional consensus, when asked,
313 the confederate verbally agreed and stated the selection of the same attribution (high attributional
314 consensus, $n = 26$), or disagreed and stated the selection of the other attribution (low attributional
315 consensus, $n = 26$). To help ensure equal group sizes, a quasi-random allocation method was
316 used as participants were assigned to either the low attributional consensus condition or high
317 attributional consensus condition by the researcher before the trial. Following the attributional
318 consensus manipulation, participants were asked to complete the manipulation check and
319 measures of conflict, cohesion, and social identity. They then completed the task for a second
320 and final time. After the second and final performance, participants were informed that the study

¹ Pilot testing indicated that, given the option of an adaptive or maladaptive attribution, around half of participants would circle an adaptive attribution after failing to reach a target score of 90.

321 was complete and were fully debriefed.

322 **Analyses.** Akin to Study 1, the effects of attributional consensus on conflict, cohesion,
323 and social identity were analysed using *t*-tests. To analyse the main and interactive effects of
324 attribution type and attribution consensus on performance, a 2 (attribution type: adaptive,
325 maladaptive) x 2 (attribution consensus: high, low) x 2 (time: pre, post) ANOVA with repeated
326 measures on the last factor was used.

327 **Results**

328 Descriptive statistics and bivariate correlations for Study 2 variables are detailed in Table
329 1. A visual inspection revealed no violations of normality for the cohesion, social identity or
330 performance variables; however, a positive skew indicating floor effects for the conflict variable
331 was observed. Parametric tests were applied as researchers have demonstrated the robustness of
332 independent samples *t*-tests using small sample sizes with floor effects (Sullivan & Agostino,
333 1992). Equal variances were assumed for social identity but not assumed for conflict and
334 cohesion; therefore, the Satterthwaite (1946) adjustment was applied for analyses on conflict and
335 cohesion. For the performance variables, there were no significant differences in error variances
336 across groups, *ps* > .54.

337 **Manipulation checks.** Two participants circled “rather like a success” and were
338 subsequently removed from the study. All 56 participants who completed the study correctly
339 identified the attribution they selected and the attribution the confederate selected. Further, no
340 participants indicated they were aware of the true purpose of the study.

341 **Demographic variables.**

342 **Age and experience.** A 2 (attribution type: adaptive, maladaptive) x 2 (attribution
343 consensus: high, low) ANOVA revealed no significant differences in age or experience between

344 attribution type conditions and attributional consensus conditions ($ps > .37$).

345 **Gender.** *T*-tests indicated that men, $M = 3.12$, $SD = .80$, reported higher levels of
346 cohesion than women, $M = 2.56$, $SD = 1.01$, $t_{54} = 2.32$, $p = .024$. There were no gender
347 differences for conflict and social identity. Further, a 2 (gender: men, women) x 2 (time: pre,
348 post) ANOVA with repeated measures on the last factor revealed no main or interaction effects
349 for gender ($ps > .14$).

350 **Conflict.** Akin to Study 1, there was a significant effect of attributional consensus on
351 perceptions of conflict. Generally, participants reported higher levels of conflict when their
352 teammate (the confederate) disagreed and selected the other attribution, $M = 1.89$, $SD = .99$,
353 compared to conditions in which the confederate agreed with the participant, $M = 1.28$, $SD = .53$,
354 $t_{54} = 2.85$, $p = .007$, $d = .88$.

355 **Cohesion.** There was also a significant effect of attributional consensus on perceptions of
356 cohesion. Participants in conditions of high attributional consensus, in general, reported more
357 cohesion, $M = 3.07$, $SD = .57$, than participants in conditions of low attributional consensus, $M =$
358 2.54 , $SD = .54$, $t_{54} = 2.15$, $p = .038$, $d = .69$.

359 **Social identity.** A significant effect of attributional consensus on social identity was also
360 observed. Participants in high attributional consensus conditions generally reported higher levels
361 of social identity, $M = 4.37$, $SD = .1.34$, compared to those in low attributional consensus
362 conditions, $M = 3.43$, $SD = 1.10$, $t_{54} = 2.83$, $p = .006$, $d = .77$.

363 **Performance.** A 2 (attribution type: adaptive, maladaptive) x 2 (attribution consensus:
364 high, low) ANOVA revealed no significant differences in pre-manipulation scores between
365 conditions ($ps > .35$). A 2 (attribution type: adaptive, maladaptive) x 2 (attribution consensus:
366 high, low) x 2 (time: pre, post) ANOVA with repeated measures on the last factor revealed an

367 interaction between attribution consensus and time, $F_{1, 52} = 4.49$, $p = .039$, $\eta_p^2 = .08$. Compared
368 to pre-manipulation baselines, participants in high attributional consensus conditions performed
369 significantly better post-manipulation ($p = .018$). There was no evidence of an effect between
370 attribution type and time on performance, $F_{1, 52} = .30$, $p = .58$, $\eta_p^2 = .01$ and there was no
371 interaction effect between attribution type and attributional consensus across time, $F_{1, 52} = .13$, p
372 $= .72$, $\eta_p^2 = .003$.

373 **Study 2 Discussion**

374 Evidence supporting the effect of attributional consensus on conflict and cohesion in real
375 groups was observed in Study 2. Generally, when the confederate disagreed rather than agreed
376 with participants' attributions, participants reported more conflict, less cohesion, and lower
377 levels social identity with the confederate. Finally, consistent with previous findings (De Dreu &
378 Weingart, 2003), the effect of agreement between the confederate and participants appeared
379 associated with improved participant performance. Importantly, this finding was observed
380 regardless of adaptive or maladaptive attributions.

381 **General Discussion**

382 These studies were designed to test if attributional consensus (i.e., high or low consensus)
383 affects interpersonal outcomes and performance (Hypotheses 1a and b), if attribution type (i.e.,
384 adaptive or maladaptive) affects performance (Hypothesis 2), and if attribution type and
385 attributional consensus interact to affect performance (Hypothesis 3). Across the two studies and
386 in line with Hypotheses 1a and 1b, high attributional consensus between teammates generally led
387 to perceptions of less conflict, more cohesion, stronger social identity, and better performance
388 compared to low attributional consensus between teammates. Hypotheses 2 and 3 were not
389 supported as, contrary to previous attribution studies, attribution type did not affect performance,

390 and there was no interaction between attributional consensus and attribution type. Instead,
391 evidence that attributional consensus between teammates might influence performance was
392 observed. In other words, agreement over the cause of an unsuccessful performance appeared
393 more influential to subsequent performance than the content of the attribution. Overall, the
394 results provide evidence for the effects of attributional consensus on interpersonal outcomes and
395 performance.

396 Attributional consensus appeared to influence interpersonal outcomes, including conflict,
397 cohesion, and social identity. Those in the low, compared to the high, attributional consensus
398 condition reported greater conflict. While some individuals and teams may handle conflict well,
399 in general, experiences of conflict are often accompanied with experiences of negative emotions
400 and perceived disruption of future goals (Barki & Hartwick, 2004). Similarly, compared to high
401 attributional consensus, those who experienced low attributional consensus reported lower levels
402 of cohesion. Cohesion among team members is known to be beneficial at the team and individual
403 level (Carron, Colman, Wheeler, & Stevens, 2002). Thus, generally, the results from these
404 studies indicate that attributional consensus might be an antecedent to important group dynamics
405 that can influence team functioning.

406 Those in the high attributional consensus condition also typically reported stronger
407 perceptions of social identity compared to those in the low attributional consensus condition.
408 Because participants had no prior relationship with the confederate, the process of agreeing on
409 attributions may have contributed to the development of social identity (Swaab, Postmes,
410 Neijens, Kiers, & Dumay, 2002). In other words, through the interaction between the group
411 members (the attributional consensus manipulation), participants' agreement or disagreement
412 with the confederate could have influenced levels of shared social identity. This can be explained

413 through the process of consensualisation (Postmes et al., 2005). According to Postmes and
414 colleagues, consensualisation occurs when agreement with group members builds social identity.
415 This might explain why participants reported higher levels of social identity when the
416 confederate agreed with them, compared to when the confederate disagreed with them.

417 A particularly novel finding is that, when it comes to performance, it appears that
418 agreeing with team-members may be of more importance than the type of attribution. Although
419 attribution researchers have previously demonstrated that performance improves when adaptive,
420 compared to maladaptive, attributions are adopted (Rees et al., 2013), the results of Study 2
421 indicate that attribution type had no effect on performance. The process of attributional
422 consensus may provide insight into this finding. Specifically, agreeing or disagreeing on
423 attributions may have reduced or negated the effects of adopting an adaptive or maladaptive
424 attribution. In other words, in a team setting, the process of agreeing or disagreeing on
425 explanations for performance might be of high importance.

426 Insight to explain this finding may be gained through Heider's (1958) Balance Theory.
427 Central to Balance Theory is the idea that one seeks harmony between themselves and the
428 situation or surrounding environment. Therefore, when a dyad experiences low attributional
429 consensus, there is a perceived imbalance. For example, when an individual learns that her
430 partner has a different attribution for a poor collective outcome, she perceives an imbalance. This
431 imbalance can then cause stress within the team members and lead to a poorer performance.
432 Indeed, Balance Theory has been used to explain negative performance effects on team motor
433 tasks (Boss & Kleinert, 2015). This may explain why participants whose team agreed on an
434 adaptive cause did not typically perform better than participants whose team agreed on a
435 maladaptive cause. In both conditions, participants may have perceived a balance between

436 themselves, their partner, and their collective performance. However, under conditions of
437 disagreement, they may have perceived an imbalance, perhaps causing stress, which resulted in
438 poorer subsequent performance.

439 No interaction effect between attributional consensus and attribution type was observed.
440 As expected, when the confederate disagreed with participants' adaptive attributions, they
441 generally reacted negatively. However, when the confederate disagreed, and communicated a
442 more adaptive attribution that contrasted participants' maladaptive attributions, participants
443 typically did not perform better. While researchers have demonstrated that adaptive attributions
444 from an in-group member can be a source of motivation (Rees et al., 2013), this did not appear to
445 be the case in the current study. This might be because the effect of disagreement between
446 teammates superseded the effect of attribution type. For example, participants may have been
447 less motivated by an adaptive attribution upon learning their teammate disagreed with them. Of
448 course, in more naturalistic conditions, teammates would be able to communicate further and
449 perhaps come to an understanding. Indeed, in field studies adaptive team-referent attributions
450 have been linked to successful performance (Carron, Shapcott, & Martin, 2014). Thus, moving
451 beyond the scope of this research, these effects might change dependent on whether teammates
452 have the opportunity to resolve the disagreement.

453 **Strengths and limitations**

454 Traditionally, in attribution studies, participants are told they have an adaptive or
455 maladaptive attribution (Le Foll et al., 2008; Rascle et al., 2015; Rees et al., 2013). This
456 approach has demonstrated the differential effects of adaptive and maladaptive attributions on
457 behavioral outcomes; however, the process in which attributions are communicated from
458 researcher to participant is inconsistent with the actual attribution process an athlete experiences.

459 In more natural settings, it is likely athletes develop their own attributions for performance, and
460 these may then be influenced by those around them. Therefore, a key strength of Study 2 was
461 that it permitted individuals to choose their attribution, thus more closely resembling the actual
462 attribution process. A caveat to this, however, is that participants were not subsequently able to
463 change their attribution after input from their teammate. Regardless, participants' attributions did
464 not appear to influence their performance and, as such, these results diverge from previous
465 attribution research (Rees et al., 2013). Building on the results of the current study, researchers
466 should explore whether athletes change their attributions after input from their teammates and
467 the extent to which this process can be generalized to more natural settings.

468 While the results of Study 2 highlight how social identity may be built through the
469 process of agreeing with group members, under non-experimental conditions existing levels of
470 social identity likely influence the propensity for agreement and the effects of agreement
471 (Postmes et al., 2005). In other words, there is likely a reciprocal relationship between
472 attributional consensus and social identity. While the current studies were limited to testing only
473 one direction of this relationship, it is likely that levels of social identity may also impact the
474 extent to which individuals experience attributional consensus.

475 Another limitation resulting from the experimental conditions concerns the extent to
476 which results are meaningful to larger intact teams. The research was completed in dyads in a
477 highly contrived situation where the interaction between the ostensible teammates was brief.
478 While this does not preclude the measurement of pertinent group processes (e.g., Tajfel, 1970), it
479 is unknown the extent to which the differences observed would disrupt or enhance psychological
480 processes in intact teams. For example, although there were significant differences between the
481 high and low consensus conditions in terms of conflict between two individuals, under non-

482 experimental conditions it is unknown whether larger intact teams would benefit from the lower
483 levels of conflict and higher levels of cohesion and social identity reported in the low
484 attributional consensus condition.

485 Finally, there are a number of methodological limitations that should be addressed. The
486 adoption of full random allocation and double-blinding in the behavioural experiment would
487 have limited the possibility of subjective bias. Another methodological limitation was that,
488 unvalidated single-item measures were used to measure levels of conflict and cohesion. Lastly,
489 regarding the effect of attribution consensus on performance, a large effect size was anticipated
490 yet a small effect size was observed. Therefore, researchers aiming to replicate these findings
491 would likely need to use a larger sample size than the one obtained within this study.

492 **Future research**

493 The aforementioned limitations should be addressed in subsequent independent
494 replication studies. Alongside replication studies, researchers might consider building upon these
495 findings by examining the situations in which might not lead to higher levels of conflict (Jehn,
496 1995). Indeed, under certain conditions, agreement may have negative effects while
497 disagreement may be advantageous. For example, agreement between team members (i.e., high
498 consensus) can foster atmospheres in which groupthink is prevalent (Hart, 1991), while sharing
499 different information among teammates (i.e., low consensus) can be beneficial to performance
500 (Goncalo & Duguid, 2008). As such, there may be times when teams will benefit from low
501 attributional consensus. If coaches and teammates observed different reasons for their team's
502 unsuccessful performance, it may be in the team's best interest to hear all potential explanations
503 to maximise their chances of amending mistakes. As such, an avenue for future research might
504 be to investigate the conditions under which low attributional consensus can facilitate

505 performance without leading to negative consequences.

506 Both conflict and cohesion were measured as unidimensional constructs, however, they
507 are often measured as multidimensional constructs (Carron, Widmeyer, & Brawley, 1985; De
508 Dreu & Weingart, 2003). Therefore, researchers could examine the effect of attribution
509 consensus on the multidimensional aspects of conflict and cohesion. That is, the constructs are
510 typically categorized into task and social conflict and task and social cohesion. As such,
511 researchers may want to examine how attributional consensus impacts perceptions of task and
512 social aspects separately. For example, because attributional consensus relates directly to
513 individuals' perceptions of a task, it is possible the detrimental effects experienced pertain more
514 to perceptions of task conflict and cohesion compared to social conflict and cohesion.

515 **Implications**

516 Assuming these results can be replicated in subsequent research, they might have practical value
517 for intact teams. Typically, maladaptive attributions were considered to be uniformly negative.
518 However, the results of the current study suggest that consensus over maladaptive attributions
519 might be beneficial. For example, when a team explains a poor performance as due to the
520 weather—something that cannot be controlled—consensus among team members that the cause
521 of their poor performance was due to the weather may actually be beneficial, even though the
522 attribution is maladaptive. In other words, teammates agreeing on the cause of events—being on
523 the same page, so to speak—may be important even if it is agreeing that we cannot control the
524 cause of a negative outcome.

525 **Conclusion**

526 The results of these studies provide valuable insight into the processes teams experience
527 after failure. Specifically, these results indicate that teams may benefit from agreement over the

528 cause of an unsuccessful performance. Direct replications are needed to confirm study findings
529 and understand how low attributional consensus within a team might cause conflict and
530 reductions in cohesion and social identity, and how low attributional consensus may be a cause
531 of poor performance. It is important how athletes individually attribute failure (Rees et al.,
532 2013); however, in a team setting, whether teammates perceive the same cause for failure may be
533 of greater significance.

534 **Formatting of funding sources**

535 This research did not receive any specific grant from funding agencies in the public, commercial,
536 or not-for-profit sectors.

537 Declarations of interest: none

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653 Table 1. Study 2 Descriptive Statistics and Bivariate Correlations

Dependent Variable	Consensus	<i>M</i>	<i>SD</i>	Bivariate Correlations				
				1	2	3	4	
1. Conflict	High	1.29	.53					
	Low	1.89	.99					
2. Cohesion	High	3.07	1.18	-.26				
	Low	2.54	.58					
3. Social Identity	High	4.36	1.34	-.27*	.61**			
	Low	3.43	1.10					
4. Performance 1	High/Adaptive	29.21	10.01					
	Low/Adaptive	32.43	7.51	-.10	.22	.19		
	High/Maladaptive	29.78	8.27					
	Low/Maladaptive	28.28	11.38					
5. Performance 2	High/Adaptive	32.21	9.04					
	Low/Adaptive	30.79	9.19	-.15	.20	.24	.71**	
	High/Maladaptive	33.14	8.95					
	Low/Maladaptive	28.35	10.55					

654 Note. *M* = Mean, *SD* = Standard Deviation, **p* < .05, ***p* < .01.

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