Do Gryffindors Cooperate More, while Slytherins Compete? A cooperativeness-competitiveness perspective on individuals' strategies for success

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Abstract

It is commonplace that adolescents and young adults use fictional characters to learn about their interaction with the social environment. Through fictional house categorisation in the *Harry Potter* series, this study takes one step forward by reflecting how this categorisation of group-based traits has implication on one's tendency to compete or cooperate in achieving success. We asked young fans of the Harry Potter series to complete the Pottermore's sorting quiz and a cooperation-competition tendency questionnaire. We predicted specific house traits to influence one's perception and attitudes to success - and results were largely consistent to previous research on this respect. Other than Slytherin's tendency of achieving their ends and Hufflepuff's agreeableness and flexibility to their means to achieve success, key findings on the individual-group complexity of cooperation-competition are profoundly examined. Issues behind the use of Cooperative-Competitive Strategy Scale in research and its assumptions are also discussed.

Keywords: Harry Potter; Competitiveness; Cooperativeness; Personality

Introduction

The influence of children's literature and narratives on one's social development has been largely documented in developmental psychology (e.g., benefits on social ability: Mar et al., 2006; awareness on cultural differences: Rasinski& Padak, 1990). It is typical for young readers to use fictional worldsto understand social situations and develop self-concepts from these situations. Mar and Oatley (2008) has posited that fictions act as social stimulations through abstraction and simplification of the usual complex real-world scenarios. As a result, this communication between readers and storylines forms an intimate relationship in that readers are usually immersed both cognitively and emotionally. This emotional state of attaching to a narrative world has been introduced as *transportation*, which allows readers to internalise their feelings into the fictional world (Green & Brock, 2000). Sometimes, readers also self-identify with characters of the narrative, in which they can empathise strongly to the characters with whom they identify with due to perceived similarity (Schramm, Lyle & Parker, 1961), consequently making fine adjustments to one's self-concept (Sestir & Green, 2009).

Harry Potter Series and Group-Based Traits

J.K. Rowling's Harry Potter series has been a global inspiration in capturing the eyes of many young readers through the novel wizarding world. In the series, Rowlingconstructed a school community with four 'houses' that are represented by distinct characteristic traits. This has allowed global readers to identify themselves to specific archetypes in the novels by putting themselves into "houses" as such.

Specifically, the Sorting Hat in the series played an important role of grouping characters of similar traits together, while dividing those who had different traits. Below are some quotes of the Sorting Hat from the first book of the series, "Harry Potter and the Sorcerer's Stone" (Rowling, 1998), showing how traits were categorised into four groups to emphasise intergroup differences:

On Gryffindor – "Gryffindor, where dwell the brave at heart"
On Hufflepuff – "You might belong in Hufflepuff, where they are just and loyal, those patient Hufflepuffs are true, and unafraid of toil."
On Ravenclaw – "Or yet in wise old Ravenclaw, if you've a ready mind, where those of wit and learning, will always find their kind."
On Slytherin – "Or perhaps in Slytherin you'll make your real friends, those cunning folks use any means to achieve their ends."

These traits have been studied empirically by Crysel and colleagues (2015), who used contemporary research-based tests of personality traits on Harry Potter fans to verify whether the fictional categorisation of "houses", measured by an online tool called "Pottermore" developed by Rowling in 2011,corresponds to research-based personality constructs at a broader real-world angle. Interestingly, research found a fair amount of mapping between Rowling's categorisation and various common personality traits. A brief summary of those findings is listed below:

On Ravenclaw – higher need for cognition
On Hufflepuff – higher agreeableness
On Slytherin – higher on Dark Triad traits (narcissism, Machiavellianism and psychopathy)
On Gryffindor - higher in extraversion and openness (Muris, Mayer& Schubert, 2010)

The researchers used the "Pottermore"sorting quiz to allocate fans into the four houses. "Pottermore" fan-site (http://www.pottermore.com/) was opened by Rowling for fans from all across the world to understand the fictional world in the Harry Potter series. Each new member is welcomed by Rowling's "Sorting Quiz", which attempts to sort new members into one of the four houses listed above. After subscription, members are free to interact online with other members coming from the same house. The adaptation of the Pottermore quiz on empirical research was the first-of-a-kind by Crysel et al. (2015) for studies to resemble fictional characters on their readers. Their initial success on group-based trait categorisation has attracted the interest of this study to extend towards the area of social cooperation and competition, and the perception of individual-group interaction in achieving success.

Cooperativeness-Competitiveness and Personality Development

The literature on cooperation and competition often characterises the two constructs into a pair of opposite facets, with many researchers adopting a one-dimensional view in explaining the constructs as two extreme tendencies on a continuum (e.g., Rapoport & Chammah, 1965). In particular, Kelley and Stahelski (1970) had gone as far as concluding that people can be broadly categorised as cooperators and competitors, with fairly stable biases to achieve goals in various contexts. They explained that cooperators tend to view people around them as different, hence cooperation with other dissimilar entities is necessary to bring success. Competitors, on the other hand, view others as similar to themselves, thus cooperation is unnecessary at most times. With the general understanding of a one-dimensional contrast between the two constructs, Simmons and colleagues (1988) came up with a Cooperative/Competitive Strategy Scale (CCSS), by exploratory factor analysis, to investigate the general strategy that individuals used to motivate themselves towards success. The researchers came up with 24 statements with particularly high loadings, which were later cut down to 19 statements in later replications of the questionnaire (e.g., Tang, 1999).

The psychological literature has often overlooked the mutual relationship between personality development and the tendency to compete/cooperate. Much effort was devoted onto the mediating or moderating effect that either competitiveness or cooperativeness could bring to personality (e.g., Graziano, Hair & Finch, 1997; Johnson, Johnson & Bryant, 1973). In a rare effort to explain their interaction on fair grounds, Hawley (2011) adopted an evolutionary perspective to investigate the dynamic relationships between competition and cooperation in the development of personality. In Hawley's words, competition and social dominance are built up early in development (for example, through peers' relations and parental interactions), particularly Machiavellianism (i.e., manipulative strategies of social conduct).

Such development could alter resource control behaviours, for instance, "prosocial controllers" usually adopt "agreeable" strategies in public, which encourages intimate peer relationships (Hawley, Little & Card, 2007). In applying evolutionary game theoretic models, Wilson and colleagues (1996) gave key hypotheses that individuals rated high in Machiavellianism should use strategic approach more flexibly than those who were rated low on the trait. Those who were rated low in Machiavellianism were characterised by being co-operators. The interaction between personality trait development and competition/cooperation is an area that remains largely unexplored.

Research Questions

Our current research examines the interaction between categorisation of traits and one's tendency to cooperate or compete towards success, with the use of Rowling's sorting quiz in determining social categorisation tendencies. This research extends the knowledge of the Crysel and colleagues' (2015) research on group-based traits on fictional characters, by exploring how competition and/or cooperation comes into one's traits to affect attitude towards and determination for success. Previous research has largely ignored the importance of group-based traits on an individual's tendency to cooperate or compete in groups. By comparing participants' house assignment on the Pottermore quiz with their tendency to cooperate/compete, we intend to find patterns in which these constructs interact.

Our research questions included:

1) How do the general cooperative and competitive tendenciesinteract with the assignment of house groups?
2) How does individual house-based traits affect one's tendency to cooperate/compete in specific contexts?
3) To what extent are competition and cooperation opposite constructs on the same dimension?

Method

Participants

Participants were 64 Harry Potter fans or Pottermore users recruited through mobile messages. Invitation was sent out one by one, with the majority of the participants recruited through volunteer and/or snowball sampling (through volunteers' friends). Online surveys were completed at the volunteers' own convenient time.

The mean age of the study's participants was21 years old (M = 21.46, SD = 2.34), with 88% of females. 4 participants were excluded from the investigation due to the lack of reported results on their Pottermore surveys (i.e., house classification was unknown). Most participants, who were fans of the novel, had already taken the Pottermore quiz before the start of the study. This was key as accessing the quiz section of the Pottermore website is time-consuming and pre-study completion reduced biases that the Pottermore test might have on the CCSS ratings. Anonymity was guaranteed in writing before the commencement of the surveys. This Pottermore quiz does not collect confidential information and is conducted on a separate portal from the current study, hence participants had the freedom to opt out from the study if they did not want to provide their Pottermore results. In an external website, Pottermore users are subscribed to the website via the Pottermore membership system - this is activated upon their first use.Some knowledge of the Harry Potter series is required to complete the survey, which explains why the fan-based volunteer sample was used. Another rationale for using volunteer samples was that the researchers lacked the rights to use or access items on the Pottermore quiz, as it belongs exclusively to J.K. Rowling and her team.Volunteers are therefore free to choose whether to subscribe to the website as their members.

Measures and Procedures

The dependent variables of the study are cooperation and competition ratings that were completed by the participants as an online questionnaire. These ratings were compiled by the Cooperative/Competitive Strategy Scale (CCSS) established initially by Simmons et al. (1988), adapted for studies on individual differences in various cultures (e.g., Tang, 1999; King et al., 1995). Responses were categorised by ratings of various statements on a 5-point Likert-like fashion, ranging from "Never" to "Always". The entire survey contained 19 statements – cooperation section was formed by 8 statements (coded to COOPa to COOPh), while competition section was measured by 11 statements (coded to COMPa to COMPk; refer to Appendix for the full list of statements). The sequences of individual statements were pseudorandomised to prevent participants from guessing their individual aims.

The independent variable in the study is the classification of house groups based on the online Pottermore quiz. The Pottermore quiz was a 29-item questionnaire, in which its results would yield one of four 'houses' assigned to each participant, with algorithms exclusively controlled by the website of "Pottermore". The responses provided multiple choices (varying from two to six possible answers) that probe one's preferences and tendencies on various scenarios (see Example questions on Appendix). The results were broadly generated from the participants' values and traits, and its validity to capture certain personality traits is shown previously by Crysel and colleagues (2015). The quiz was a key component to determine the relationship between houses' distinctive traits and the levels of cooperation and competition as motivation for success. The final sample distribution of the four houses are as follows: Gryffindor ($N = 18$), Hufflepuff ($N = 15$), Ravenclaw ($N = 15$) and Slytherin ($N = 12$).

Procedures

Participants completed anonline survey of CCSS, followed by the Pottermore sorting quiz (if not already done), then were asked to reported both sets of results to the researchers. The sequence of the surveys was kept constant for all participants to minimise the possibility of the Pottermore results affecting the ratings on CCSS and to avoid possible fatigue effects on the former survey. Following the completion of CCSS, participants were asked to report their most recent Pottermore results to the researchers. Participants were not required to report the detailed answers of the Pottermore survey – only the final house assignment was reported as a nominal measure.

All values on the CCSS survey statements were coded from 1 to 5 on an ordinal scale, with a larger number indicated a higher extreme attitude for either cooperation or competition on their relevant construct. The coded ratings of 8 cooperation variables and 11 competition variables were also averaged to come up with two scaled composite scores for cooperation and competition respectively. One-way Analyses of Variances were conducted for the 2 composite scores and 19 survey variables, against the nominal groups of houses from the Pottermore quiz. Post-hoc tests would be conducted once there were significant main between-group effects. Additional correlational analyses would also be run on the ordinal variables of competition and cooperation to explore the validity of the various cooperation/competition statements categorisation of the CCSS from our sample.

Results

One-way ANOVAs were conducted to analyse whether there were significant differences in cooperation and competition scores amongst the different house groups. However, upon further examination on the Levene's Test of homogeneity of variances, both competition and cooperation variables consisted of a significant number of variables with a violation of basic assumptions with parametric ANOVAs (Variables with $p < .05$ included: competition composite score, COOPa, COOPc, COOPd, COOPe, COOPf, COOPh, COMPa, COMPb & COMPe). To avoid the false rejection of null hypotheses, non-parametric Kruskal-Wallis tests were used to carry out the one-way ANOVA hypotheses testing.

By analysing the cooperation composite scores, there were significant differences between groups on cooperation scores ($X^2(3, N = 60) = 9.13$, $p = .028$). Post-hoc pairwise analysis with Mann-Whitney tests was conducted, which found the cooperation scores of Gryffindor ($Mdn = 3.38$) weresignificantly higher than that of Ravenclaw($Mdn = 3.13$), $U = 17.60$, $p = .022$, $r = .0.38$. It can be shown that Gryffindor and Slytherin leaned toward "Most of the time" for cooperation, while Hufflepuff rated close to "About half the time" for statements related to cooperation. Specificmain effects were found on COOPc($X^2(3, N = 60) = 32.07$, $p < .001$), COOPd($X^2(3, N = 60) = 16.56$, $p = .001$), COOPe($X^2(3, N = 60) = 20.41$, $p < .001$), COOPf ($X^2(3, N = 60) = 22.51$, $p < .001$ andCOOPg($X^2(3, N = 60) = 17.78$, $p < .001$).

Participants from Ravenclaw($Mdn = 2$) rated significantly lower than Slytherin ($Mdn = 3.5$; $U = 20.50$, $p = .009$, $r = .0.41$) and Gryffindor($Mdn = 4$; $U = 29.22$, $p < .001$, $r = .65$) on COOPc, additionally Gryffindor ($Mdn = 4$) rated significantly higher on the statement than that of Hufflepuff ($Mdn = 2$; $U = 24.69$, $p < .001$, $r = .54$). A similar pattern was observed on COOPe as Gryffindor($Mdn = 5$) scored significantly higher than Hufflepuff ($Mdn = 3$; $U = 21.33$, $p = .002$, $r = .47$) and Ravenclaw ($Mdn = 3$; $U = 22.13$, $p = .001$, $r = .49$). On the reversed statementCOOPf ("In the end, cooperation with others is not compatible with success"), Gryffindor ($Mdn = 4$) and Hufflepuff ($Mdn = 3$) scored significantly lower than that of Ravenclaw ($Mdn = 5$):

Gryffindor-Ravenclaw: $U = 15.00$, $p = .047$, $r = .34$; Hufflepuff-Ravenclaw:$U = 25.07$, $p< .001$, $r = .55$. Ravenclaws were more likely to answer "Always" compared to Gryffindor's "Most of the time" and Hufflepuff's "Half of the time" on the reversed statement.

Additionally, Hufflepuff ($Mdn = 3$) rated lower than that of Slytherin ($Mdn = 4.5$) on the reversed COOPf: $U = 22.23$, $p = .002$, $r = .46$.Again, these results seemed to suggest Gryffindors appeared to have consistently higher scores on cooperation statements with relations to COOPc, COOPe and COOPf, while Hufflepuff had higher tendency to cooperate than Slytherin on COOPf.

On COOPg, a reversed pattern was found. On COOPg ("I enjoy working with others to achieve joint success"), Gryffindor ($Mdn = 4$) scored significantly lower than all other houses (Gryffindor-Ravenclaw, $Mdn(R) = 5$; $U = 16.98$, $p = .008$, $r = .42$; Gryffindor-Hufflepuff, $Mdn(H) = 5$; $U = 16.98$, $p = .008$, $r = .42$; Gryffindor-Slytherin, $Mdn(S) = 5$; $U = 19.78$, $p = .003$, $r = .45$). Gryffindor appeared to score lower to that of Hufflepuff and Ravenclaw in cooperation statement COOPg. On reversed statementCOOPd ("Success is only achieved through individual effort"), Hufflepuff ($Mdn = 2$) scored significantly lower than that of Slytherin ($Mdn = 4$; $U = 20.60$, $p = .007$, $r = .42$) and Gryffindor($Mdn = 4$; $U = 17.93$, $p = .010$, $r = .40$), meaning Hufflepuff chose "Sometimes" more frequently to this statementthan that of other houses, with Slytherin's and Gryffindor's median ratingsat "Most of the time". This again shows that Gryffindor and Slytherin may score lower than Hufflepuff on cooperation score on COOPd.

For composite scores in relations to competition, there were significant, but smaller (compared to cooperation scores), differences between groups(X^2(3, $N = 60$) = 8.16, $p= .043$). No statistically significant pairwise patterns were detected between groups. For specific variables relating to competition, significant main effects were found on COMPa (X^2(3, $N = 60$) = 8.27, $p= .041$), COMPb (X^2(3, $N = 60$) = 8.26, $p= .041$), COMPd (X^2(3, $N = 60$) = 10.93, $p= .012$), COMPf (X^2(3, $N = 60$) = 14.46, $p= .002$), COMPi (X^2(3, $N = 60$) = 8.95, $p= .030$), COMPj(X^2(3, $N = 60$) = 23.35, $p< .001$) and COMPk (X^2(3, $N = 60$) = 10.79, $p= .013$).

Post-hoc pairwise analysis with Mann-Whitney tests was conductedon all the survey's competition variables. Similar patterns were detected for COMPa and COMPd, as participants from Hufflepuff (COMPa: $Mdn = 3$; COMPd: $Mdn = 3$) significantly rated lower than that of Slytherin (COMPa: $Mdn = 4.5$; COMPd: $Mdn = 4.5$):COMPa: $U = 17.47$, $p = .041$, $r = .35$; COMPd: $U = 17.17$, $p = .037$, $r = .35$. Consistent patterns were also found on COMPb, COMPf and COMPj, as participants of Gryffindor(COMPb: $Mdn = 2$) rated significantly lower than Slytherin(COMPb: $Mdn = 4$) on the COMPb reversed statement "Success is not very important to me": COMPb: $U = 16.83$, $p = .007$, $r = .35$. Gryffindor (COMPf: $Mdn = 2$) also rated significantly higher than Slytherin (COMPf: $Mdn = 1$) and Ravenclaw (COMPf: $Mdn = 1$) on COMPf statement "To succeed, one must compete against others": Gryffindor-Slytherin: $U = 18.06$, $p = .017$, $r = .38$; Gryffindor-Ravenclaw: $U = 19.29$, $p = .001$, $r = .44$. On the reversed statement COMPj "I am happier when I am not striving to succeed", Gryffindors ($Mdn = 2$) rated themselves significantly lower than that of Slytherin ($Mdn = 3$) and Ravenclaw ($Mdn = 3$): Gryffindor-Slytherin: $U = 22.39$, $p< .001$, $r = .47$; Gryffindor-Ravenclaw: $U = 25.02$, $p< .001$, $r = .56$.From these findings, we can conclude that Gryffindor appears to rate themselves higher on competition statementson COMPb, COMPf and COMPj, compared to that of Slytherin and Ravenclaw, and that Hufflepuff rated lower on competition compared to that of Slytherin on COMPa and COMPd.

In light of the nonparametric nature of the data, Spearman's correlations were conducted to investigate the relationships between and within competition and cooperation variables. It was shown that the composite scores of cooperation significantly correlated with variables COOPa (r_s(64) = .31, $p= .013$), COOPb (r_s(64) = .26, $p= .036$), COOPc (r_s(64) = .37, $p= .003$), COOPe (r_s(64) = .47, $p< .001$), COOPf (r_s(64) = .48, $p< .001$), COOPh (r_s(64) = .45, $p< .001$) and COMPi (r_s(64) = .26, $p= .041$). The cooperation composite also correlated negatively with COMPk (r_s(64) = -.26, $p< .035$). On the other hand, competition composite correlated positively with variables COMPa (r_s(64) = .64, $p< .001$), COMPc (r_s(64) = .55, $p< .001$), COMPd (r_s(64) = .46, $p< .001$), COMPe (r_s(64) = .39, $p= .001$), COMPg (r_s(64) = .50, $p< .001$), COMPi (r_s(64) = .46, $p< .001$) and COMPk (r_s(64) = .71, $p< .001$). The competition composite also correlated negatively with COOPd (r_s(64) = -.34, $p= .005$) and COOPf (r_s(64) = -.34, $p= .006$). There was no significant correlation between cooperation and competition composite scores.

Detailed table of the results of correlational analyses within cooperation variables and within competition variables are computed on Table 1.

Table 1. Correlations between Cooperation Composite, Competition Composite and Survey Variables

	Cooperation Composite	Competition Composite
Cooperation Composite	1	-.106
Competition Composite	-.106	1
COOPa	.307*	.068
COOPb	.262*	.185
COOPc	.369**	.135
COOPd	.166	-.344**
COOPe	.467**	-.071
COOPf	.475**	-.339**
COOPg	.002	.172
COOPh	.445**	-.137
COMPa	-.234	.646**
COMPb	.106	.024
COMPc	-.134	.551**
COMPd	.050	.456**
COMPe	-.057	.390**
COMPf	.200	-.134
COMPg	-.131	.495**
COMPh	-.103	.104
COMPi	.256*	.455**
COMPj	-.099	.056
COMPk	-.264*	.708**

Key: *. $p < .05$
       **. $p < .01$

Discussion and Conclusion

As adolescents and young adults frequently identify themselves with fictional characters to inform their social identification and interactions with peers, many use the Pottermore sorting quiz to seek self-understanding and group identification with a fictional "house" (Crysel et al., 2015; Mar & Oatley, 2008). To understand this further, we have analysed the interaction between individual traits and the determination to group-individual success. There is little surprise that the composite scores of cooperation and competition yield no clear patterns between houses. The only significant contrast was found between Gryffindors and Ravenclaws, in which Gryffindors appeared to cooperate more. This was consistent to our previous prediction, although there were no clear patterns with the composite scores on Slytherins. As Tang (1999) has rightly pointed out, the scales of competition and cooperation on CCSS as a whole are insensitive to group differences because of imbalanced weightings between the two scales. Since the introduction of CCSS by Simmons et al. (1988), little effort has been placed on increasing the scales' validity through placing appropriate weightings between cooperation and competition on the scale. For this research is concerned, it is important to evaluate the factors in the scales separately.

Consistent to previous research on cross-cultural studies (e.g., Tang, 1999), similar effects were found with individual statements on the CCSS, for example, COOPc and COOPd. On hindsight, our results appear to support Tang's (1999) claims, in that these statements have more weight than others on the cooperation sector, which are determined by their statistical significancefrom our results. However, this research differs in the directions on some of these effects. In particular, we found that the effects of COOPc, COOPe and COOPf are of opposite directions to that of COOPd and COOPg. A closer examination into the statements reveals slightly different focuses of the subthemesof cooperation. COOPc, COOPe and COOPf all emphasised on the explicit importance of "cooperation", as only these three out of the eight cooperation statements included an explicit presentation of this word. On the contrary, COOPd and COOPg emphasised explicitly on the need on an "individual's" contribution to success.

With the basis of this difference in mind, we can conclude that our data is robust in suggesting that Gryffindors tended to treat explicit cooperation as a main focus to their goal-directed success, whereas Ravenclaws and Hufflepuffs tended to perceive group cooperation to have a lesser effect on ultimate success, compared to individual's contributions. However, it remains unclear why Gryffindors rated consistently the lowest out of all the houses on COOPg, and scored low on COOPd as well. Although hard to verify, it is possible that Gryffindors tend to achieve group success rather than focusing on an individual's contribution and/or success – theirattitudes of individual contribution may therefore be different to those from other houses, who may perceive individuals as a more important entity on the achievement of success.

Another interesting observation from the cooperation scores can be found on data relating to that of Hufflepuffs. Despite rating differently to Gryffindor's explicit cooperation tendencies, Hufflepuffs showed immense similarity on COOPd, COOPf and COOPg, as they scored consistently higher than Gryffindors (on COOPd and COOPg), Slytherin (on COOPf) and Ravenclaw (on COOPf). As previous research and Rowling (1998) have posited, Hufflepuffs are known to be agreeable and loyal in their traits (Crysel et al., 2015), it is possible that these individual cooperation statements could be related to these relevant traits. Delving deeper into the pragmatics of these statements allows us to conclude that COOPg appeared to be a statement that allows leniency to different methods of success, which is consistent to the agreeable traits that Hufflepuffs are known to possess. As for the reversed statements COOPd and COOPf, both statements are extreme assertion of the importance of one's ability or effort to success (i.e., "through individual effort" and its (in-)"compatibility" with cooperation). It is therefore unsurprising that Hufflepuffs agree to a lesser extent on the lack of lenience and flexibility of different ways to success, thereby scoring low on these items.It can be shown that Hufflepuffs have a profound level of flexibility in mind while cooperating with others in goal-directed behaviours.

Results on competition scores are fairly consistent within our sample. Digging deeper into the competition data reveals Slytherins' apparent rating superiority on COMPa and COMPd over Hufflepuff. This finding may be due to two reasons – (1) Hufflepuff's apparent negativity to these statements; and/or (2) Slytherin's positivity towards the statements. By analysing the statements more closely, we can observe that these statements belong to the same type of more 'radical' ideas to success as COOPd and COOPf discussed in the previous paragraph. By radicality, these statements ignored other possible emotional, social, metacognitive, humanistic factors to success. They emphasised on the importance of achieving their ends by any means. To this end, this conclusion appears to echo to the flexibility Hufflepuffs demonstrate in achieving success and possibly agreeableness in the cooperation statements. Additionally, we possess some evidence of Slytherin's emphasis on achieving their goals with any possible means, as detailed by Crysel and colleagues (2015). Another crucial finding from our competition section was that Gryffindors compete consistently more than that of Slytherins and Ravenclaws. With the reliability within our data, we can claim a strong effect on Gryffindors' higher tendency to compete across situations. This finding contradicts with our hypothesis that Slytherins were more prominent competitors compared to other houses due to their characteristic personality of Machiavellianism. All in all, our cooperativeness-competitiveness findings conclude convincingly that Gryffindors rate higher than other houses on most critical cooperation and competition scores, and that Slytherins generally appeared *not* to compete more than other houses – which contradicts the explanation of Hawley's (2011). Future research is required to qualitatively determine how this pair of seemingly opposite constructs maps onto specific sets of personality traits.

The robustness of the current study's findings on Gryffindors allows us to understand the interaction between personality and competitiveness-cooperativeness in depth. In Crysel et al.'s (2015) study, the researchers expected, but did not find any, relationships between Gryffindors and the Big Five Personality Trait 'openness to experience'. The authors suggested the potential relationship between openness and Gryffindors was due to their tendency to be courageous, and that bravery has been shown to correlate with openness and extraversion traits in children (e.g., Muris et al., 2010). Crysel and colleagues attributed their lack of findings, between Gryffindors and openness, to the lack of sensitivity of Big Five Personality Model to detect 'bravery' as a trait, implying the irrelevance of the trait openness to this group to their study. However, our findings demonstrated that traits of Gryffindors are more complicated than previously thought, on the spectrum of competitiveness-cooperativeness. Due to their higher ratings on both competitiveness and cooperativeness scales, we argue this house-based group is related to higher level of openness to experience, as previous research has found strong effects betweenopenness to experience anda wide range of competitiveness traits (Johnson, 1992) or cooperativeness behaviours (Hilbig et al., 2013).

Particularly, in Johnson's paper, the author detected that the level of ambition and sociability traits significantly predicted competitiveness. Combining all these findings suggests that the Gryffindor-related tendencies of competitiveness and cooperativeness have strong ties with openness and extraversion/sociability. The mixed results for openness for experience can be accountable by the complexity and multi-dimensional traits that Gryffindors demonstrate in various situations, such as variation of attitudes towards ingroups and outgroups. This paper reinvigorates future inter-disciplinary research on personality and social psychology to explore the nature of openness to experience, and how it predicts situational tendency to cooperate or to compete from the perspective of group dynamics. Replication on Crysel et al.'s study can additionally link the Gryffindors' trait of bravery to openness to experience, while controlling for competitiveness and/or cooperativeness, to better explain the complex, multi-faceted trait of bravery.

Recent literature diverts away from the binary nature of the competition-cooperation continuum (Simmons et al., 1988) that the CCSS model assumes for these two constructs, which coincides with our findings on Gryffindors (i.e., Gryffindors scored higher on both cooperativeness *and* competitiveness). In fact, Lu and colleagues (2013) argued that cooperativeness and competitiveness should load on distinct dimensions and might even be mildly positively correlated. Although our ANOVAs and correlational analysis could not go as far as concluding the natures of factors and dimensions, the lack of significant correlations between the two composite scores may support such proposal that competitiveness and cooperativeness may be distinct facets after all.

Our correlational findings disclosed contradictory conclusions to the validity of the CCSS and the measurement of motivations on achieving success. It can be shown that there are high degree of correlations between composite scores and their related attributes, validating the relationships between individual statements in the scales. However, issues may remain with the questionnaire*per se*, as some statements carry a lower weighting (e.g., COOPg, COMPb, etc.), which may result in their apparent lack of correlation to the relevant cooperation or competition composite. The lack of apparent link within each category could be due to the deficiency in face validity to the test design. As we have shown in our findings, statements of success are often multi-dimensional and may address different psychological attributes across statements of the same construct.

Other than the potential drawbacks on the use of CCSS, there are other limitations to our study. One of the major fragilities concerns the potential sampling problems – i.e. the size insufficiency and the homogeneity of our sample. Both issues have possibly led to the violation of ANOVA assumptions in our study, directly causing us to adopt nonparametric estimates on ANOVAs and correlations. It is preferable for future studies to keep the *N* at a level close to 400 for a margin error of 5% (Field, 2013). Moreover, the homogeneity of our sample is kept at a high level due to our volunteer sampling and snowballing method in our resource-restricted data collection process. Furthermore, the sample homogeneity is further enhanced by the fact that our samples are primarily fans of the specific novel series.The diversity of personal interests and consequently its representativeness of social cognition to the whole population is definitely debatable. In the future, replication studies can be greatly enhanced by a randomised recruitment of sample from a Harry Potter fan-based platform, fans of identification from other fictions, or even non-fans, more elder participants and more male samples to validate the in-depth nature of fictional identification to individual and group success in the population.

It is important to note that any future research of this kind, including the present one, should be credited as the intellectual property of J.K. Rowling. This study examines the possibility that young readers of the Harry Potter series identify with the series' fictional characters and subsequently motivate them in similar ways to that of these "made-up"traits. Consistent to previous psychological research on Rowling's popular novels, the current study confirms the series' contribution on shaping how their fans perceive competition and cooperation in the pursuit of their goals. Our robust findings on Gryffindors have particularly shown how the interaction between individuals' personality development (e.g., openness to experience) and social goal-directed cognition (competitiveness-cooperativeness spectrum) is an area that is often overlooked in research. Hopefully, our original perspective, coming from the lens of the Harry Potter series, revitalises the field of the personal-social interactions on the execution of goal-directed behaviours.

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