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# What group dynamics lead to dishonesty? A study of the antecedents and mechanisms of collective cheating

Zanetti Cinzia

UNIL | Université de Lausanne

FACULTÉ DES SCIENCES SOCIALES ET POLITIQUES
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**IMPRIMATUR**

Le Décanat de la Faculté des sciences sociales et politiques de l'Université de Lausanne, au nom du Conseil et sur proposition d'un jury formé des professeurs

- M. Fabrizio BUTERA, Professeur, Directeur de thèse
- M. Benoît DOMPNIER, Maître d'Enseignement et de Recherche à l'Université de Lausanne
- Mme Caroline PULFREY, Formatrice à l'Université de Genève
- M. Shaul SALVI, Professeur à l'Université d'Amsterdam, Pay-Bas

autorise, sans se prononcer sur les opinions de la candidate, l'impression de la thèse de Madame Cinzia ZANETTI, intitulée :

**« What group dynamics lead to dishonesty ? A study of the antecedents and mechanisms of collective cheating. »**

Nicky LE FEUVRE
Doyenne

Lausanne, le 22 septembre 2023

## RÉSUMÉ

Dans la vie de tous les jours, les personnes trichent. A l'école, au travail, lors de compétitions sportives ou de jeux. Souvent, elles ne trichent pas toutes seules mais elles le font à plusieurs : avec des camarades de classe, des ami·e·s, des collègues, des membres de la même équipe ou du même groupe. Ce que l'on désigne sous le terme de *tricherie collective* est un comportement de groupe courant, qui peut avoir des conséquences néfastes, en fonction du contexte : un moins bon apprentissage, des pertes financières pour l'entreprise, une disqualification sportive, des conflits relationnels par exemple. Malgré ces potentielles conséquences, la tricherie collective apparait comme un comportement fréquent dans la vie ordinaire des personnes ordinaires. Une plus grande tendance à tricher en groupe que dans des situations individuelles a été largement mise en évidence de manière empirique. Ces dernières années, une littérature, de plus en plus étayée, s'est penchée sur l'étude des prédicteurs et des mécanismes de ce comportement. Cependant, des lacunes existent dans l'étude de ce phénomène, de son apparition et des dynamiques de groupe impliquées. Cette thèse souhaite contribuer à la compréhension de la tricherie collective avec différentes approches méthodologiques et axes de recherche. Dans le premier chapitre, nous proposons un modèle de la tricherie collective qui regroupe les contributions dans le domaine. Ce modèle met en évidence des facteurs contextuels et motivationnels pouvant exercer une influence sur la propension des groupes à tricher. Avec le deuxième chapitre, nous avons exploré l'événement de tricherie collective dans son ensemble, depuis ses débuts jusqu'à son impact sur le groupe, retraçant ce que nous avons appelé *la chronologie de la tricherie collective*. Dans le troisième chapitre nous avons testé l'hypothèse commune d'une diffusion de la responsabilité en groupe, en étudiant si les expériences de tricherie collective (vs. individuelle) réduisent la responsabilité individuelle, donnant lieu à une diminution du sentiment de culpabilité. Dans le quatrième chapitre, nous avons étudié le rôle de la coopération sur l'ampleur de la tricherie collective. Dans le dernier chapitre, nous avons mesuré l'importance que le contexte—normes et culture—joue dans l'acceptation de la tricherie collective. Dans ce chapitre, nous proposons un instrument utile à la détection de la présence d'une culture pouvant favoriser l'émergence de ce comportement. Pour résumer, cette thèse contribue à une analyse systématique de la tricherie collective, de ses prédicteurs, de ses mécanismes et des processus de groupe associés.



## ABSTRACT

People cheat in everyday life. At school, at work, during sporting competitions or games. Often, they do not cheat alone, but they do it with others: with classmates, friends, colleagues, members of the same team or group. What is known as *collective cheating* is a common form of group behaviour that can have detrimental consequences, depending on the context: lower levels of learning, financial losses for the company, disqualification from sport and conflicts in relationships, for example. Despite these potential consequences, collective cheating appears to be a frequent occurrence in the ordinary lives of ordinary people. A greater tendency to cheat in groups than in individual situations has been widely demonstrated empirically. In recent years, a growing body of literature has examined the predictors and mechanisms of this behaviour. However, there are gaps in the study of this phenomenon, its emergence and the group dynamics involved. This thesis aims to contribute to the understanding of collective cheating by using different methodological approaches and lines of research. In the first chapter, we propose a model of collective cheating that brings together contributions in the field. This model highlights contextual and motivational factors that may exert an influence on groups' propensity to cheat. In the second chapter, we explored the collective cheating event as a whole, from its beginning to its impact on the group, retracing what we called *the chronology of collective cheating*. In the third chapter we tested the common hypothesis of a diffusion of responsibility in groups, by studying whether experiences of collective (vs. individual) cheating reduce individual responsibility, giving rise to a reduction in the feeling of guilt. In the fourth chapter, we studied the role of cooperation on the extent of collective cheating. In the last chapter, we measured the importance that the context—norms and culture—plays in the acceptance of collective cheating. In this chapter, we propose an instrument for detecting the presence of a culture that may encourage the emergence of this behaviour. To sum up, this thesis contributes to a systematic analysis of collective cheating, its predictors, its mechanisms, and the associated group processes.

## ACKNOWLEDGEMENTS

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# INTRODUCTION

Who has never cheated once in their life? At school? At work? Not even in a game? Oftentimes, people face ethical dilemmas: Behave honestly or cheat to gain an advantage, to attain a goal. In these situations, people experience the opposition of two forces or two motivations: that of reaching a desired goal by cheating, breaking established rules and norms, and that of being honest, and therefore shining a light on morality and moral principles. And it frequently happens that, as a result, they decide to cheat. This conduct occurs in many environments, at school, at work, in sports, and in games. For instance, academic dishonesty is a widely spread phenomenon: A large share of students report having cheated at least once during their studies (e.g., almost 99% according to Ampuni et al., 2020; 76% according to Jeergal et al., 2015; between 13% and 95% according to McCabe & Trevino, 1997), or having witnessed someone else cheating (e.g., 90% according to Teixeira & Rocha, 2010).

In many situations, when someone cheats, he or she does not cheat alone, but does it with “others”. “Others”, who are usually peers, friends, classmates, colleagues, teammates. “Others”, who are often part of the social group to which the person identifies with, and to which they belong. When people cheat as a group, they engage in what is called *collective cheating*. Collective cheating scandals have been making the headlines for several years now. Scandals as the ones involving Volkswagen’s emission fraud (e.g., Hotten, 2015), Monsanto with its ghost-writing technique on glyphosate (e.g., Horel & Foucart, 2017) or, more recently CreditSuisse accused of involvement in crime and fraudulent affairs (e.g., Pegg et al., 2022) show that corporate frauds are frequently reported in the media. Also in sports, the doping case of cyclist Lance Armstrong with the involvement of his whole team (e.g., Wilson, 2013), as well as the scandal involving the baseball team Houston Astros with its signal-stealing strategy (e.g., Vigdor, 2022) received substantial media attention. Finally, in the academic environment, many school and universities around the globe made the headlines for massive

collective dishonesty. For instance, we can mention the 124 Harvard's students who cheated on exams, in the United States (e.g., Pérez-Peña & Bidgood, 2012), a collective cheating among university medical students in France (e.g., Ponlevé, 2022), or friends and relatives who climbed the school walls to help students with their exams in India (e.g., BBC, 2015).

Research has shown that people—ordinary people—have a tendency to cheat more when they are with others than in situations where they act alone (e.g., Weisel & Shalvi, 2015), highlighting what is defined in the literature as a "dishonesty shift in groups" (Kocher et al., 2018). This increase in dishonesty in group situations raises questions about the specificities—in terms of predictors and mechanisms—of collective cheating. How does collective cheating emerge and work? What are the group processes and mechanisms involved? What individual and contextual factors can influence the emergence and implementation of collective cheating? There has been growing interest in the collective cheating phenomenon and in understanding its underlying processes in recent years. If, one enters in Google Scholar the following keywords "collective cheating" OR "collaborative dishonesty" as criteria, around 420 references are found, more than 350 of which have only appeared in the last ten years. However, despite this growing literature, some questions in the literature on collective cheating remain unanswered. To highlight the most glaring gaps, apart from a few studies on specific events (e.g., Castille & Fultz, 2018), the question of how collective cheating arises and develops—i.e., the episode as a whole—has actually not been explored. Also, although often used as explanatory elements in collective cheating, some group processes such as cooperation, or certain mechanisms typical of collective contexts, such as the shared responsibility within groups, has not been tested empirically. Finally, while the literature on collective cheating regularly mentions the power of contexts on individual and group dishonest decisions—in terms of culture and peers' behaviour—such contextual influence received little empirical consideration. Even though the current literature on

collective dishonesty is providing an increasing understanding of this group behaviour, research questions crucial to a more accurate and comprehensive picture of this phenomenon remain to be explored. The aim of this thesis was therefore to study collective cheating in-depth and to provide answers to the gaps we identified in the literature. The work conducted to this end, through several methodological approaches, is enclosed in the five chapters that constitute the present thesis[1].

In Chapter 1, "A contextual-motivational model of collective cheating: A conceptual synthesis and a literature review", we reviewed and structured the literature on collective cheating within a contextual-motivational approach based on Murdock and Anderman's (2006) model for individual academic cheating. With this review, we expected to contribute to the literature on collective dishonesty by proposing a theoretical framework of collective cheating based on three main questions: a) group purposes, b) group efficacy, and c) cost management related to the collective dishonesty. Moreover, this synthesis allowed to highlight some of the main—contextual and motivational—features which are commonly involved in collective cheating experiences. The observation that the collective cheating event had rarely been studied in its entirety led us to the work presented second chapter.

Thus, chapter 2, "The chronology of collective cheating: A qualitative study of collective dishonesty in academic contexts", was motivated by the necessity to provide an overview of collective cheating in academic settings. In order to do this, we interviewed 20 individuals, i.e., former students, about their past collective cheating events. We expected to contribute to the literature on collective dishonesty by providing a global view of the collective cheating event—what we later called the *chronology of collective cheating*—and

[1] All the materials used in the present studies, as well as the data and analysis syntax, are available on the https://osf.io website. The specific link for each study can be found in each chapter.

the group processes involved. Indeed, this study retraced for the first time the entirety of a collective cheating event in school and academic contexts—from its beginning to its impact on the group. We also highlighted some specific facets and processes typical of this behaviour. For instance, we pointed the cooperative and prosocial nature of collective cheating and the fact that, in a group, cheaters claimed less responsibility and did not repot guilt—but rather satisfaction. Moreover, we showed the importance in collective cheating of peers' behaviour as well as the culture of dishonesty conveyed by the context. These findings motivated our subsequent studies, which focused more specifically on the processes inherent to group settings, such as the (perceived) reduction of responsibility and guilt, and the role of cooperation.

Chapter 3, "The liberating effect of the group: Past experience of cheating together makes us feel less responsible and less guilty", presents three studies aimed to empirically test the common hypothesis of diffusion of responsibility in collective settings, i.e., the assumption that responsibility can be shared in groups, as an underlying mechanism of collective cheating. Our purpose was to investigate the perception of responsibility and the feeling of guilt in collective dishonesty, and its difference from individual cheating. We expected that in collective cheating experiences, responsibility, and guilt (which sees responsibility as a central component), would be less salient, and reduced in comparison with individual cheating.

In chapter 4, "Cooperative dishonesty: When working together means cheating together", drawing on two related studies, we looked at what appeared a main characteristic of collective cheating: its cooperative nature. In the pilot study, we explored the extent to which cheaters perceived the collective cheating experience as collaborative, and, in the main experiment, we manipulated the history of cooperation (long-term vs. one-time) to test its impact on the extent of collective cheating. We expected to contribute to the literature by

investigating more precisely the role of cooperation—and more specifically the history of cooperation—on the extent of collective cheating but also as a potential outcome of this phenomenon, as highlighted in the second chapter.

Finally, in chapter 5, “Detecting collective cheating culture in academic contexts”, we tackled the important role that culture and descriptive norms, i.e., what peers do, may have in collective cheating experiences and in their implementation. With this work, we wanted to contribute to the field by bringing together the literature on the influence of culture and norms on collective dishonesty. We also aimed to provide a concrete tool for detecting such culture. To do this, we conducted three studies aimed to develop (Study 1) and validate (Study 2 and 3) the Collective Cheating Culture Scale (CCCS), a novel measure assessing the culture of collective cheating in academic contexts.

Altogether, the lines of research covered in the present thesis allow to highlight key contextual and motivational factors, as well as ingroup processes, that are involved in collective cheating experiences, and participate its emergence, implementation and perpetuation.

# CHAPTER 1:

# A Contextual-Motivational Model of Collective Cheating: A Conceptual Synthesis and a Literature Review


## Abstract

This review aimed at providing a conceptual synthesis of the growing literature on collective cheating. Murdock and Anderman (2006) organized the literature on individual cheating along three motivational questions that lead individuals to be likely to cheat: a) having extrinsically-focused (performance or ego-oriented) goals, b) believing they cannot achieve those goals honestly, and c) believing that the potential costs of cheating are minimal. Building on their model, we proposed a framework for understanding collective cheating. We integrated different literatures and theoretical contributions, organizing them into a contextual-motivational perspective allowing one to predict and explain—and inhibit—collective cheating. Our review of the literature revealed that collective cheating appears to be driven by extrinsic motives, related to performance or financial gain, but also by social motives related to group identity. People also tend to cheat more in groups if their self-efficacy and that of the group, i.e., team-efficacy, was perceived to be low. Finally, when people decided to cheat together, they also assessed the costs of the behaviour, in terms of negative consequences or even in moral terms. The latter appeared particularly sensitive to the perceived positive experience of collective cheating behaviour. We discuss the similarities between our framework and the framework for individual cheating proposed by Murdock and Anderman (2006) and highlighted the peculiarities of cheating in collective settings, where two or more people collaborate dishonestly. We outline several suggestions for future work.


*Keywords:* collective cheating, collaborative dishonesty, literature review, integrated theoretical framework, contextual-motivational perspective

*Note.* The present paper is in preparation as: Zanetti, C., & Butera, F. (2023). A contextual-motivational model of collective cheating: A conceptual synthesis and a literature review. *Manuscript in preparation*.

## A Contextual-Motivational Model of Collective Cheating: A Conceptual Synthesis and a Literature Review

Cheating together with friends, classmates, colleagues, or members of one's own team appears to be a common collective behaviour that can be found in many areas of everyday life, from education to work settings, from gaming to sports. The media regularly report examples of this phenomenon with scandals such as the Houston Astros baseball team with their sign-stealing strategy (Vigdor, 2022) or the CreditSuisse bank's alleged involvement in criminal cases, corruption, and fraud related to investment and money laundering (Pegg et al., 2022). Experimental studies support the observation that such behaviours, at a smaller scale, are common in everyday life, showing that cheating in collective settings is also widespread in laboratory studies (e.g., Kocher et al., 2018).

Research on collective cheating has greatly increased in recent years, providing a more and more complete overview of the major sources of influence on the collective cheating phenomenon. Major predictors of collective cheating include familiarity between group members (e.g., Pulfrey et al., 2018, Study 4), the utility of the dishonesty (e.g., Weisel & Shalvi, 2015), i.e., a similar degree of benefit to all group members, and the possibility for the group to interact and communicate (e.g., Kocher et al., 2018). Moreover, contextual factors, such as competition, pressure, or autocratic leadership are also major influences on collective dishonesty (e.g., Castille & Fultz, 2018). These few examples illustrate the diversity of contributions in the field of collective cheating and the need for a coherent structure.

The aim of the present paper is to provide a unified framework providing a conceptual organisation of the main findings on collective dishonesty. Based on Murdock and Anderman's model (2006) for individual academic cheating, we proposed to organize the existing contributions, drawn from a diverse array of research traditions, within the same contextual-motivational perspective to explain the propensity to cheat in groups.

## Collective Cheating: a Conceptualisation

### *Defining Collective Cheating*

Collective dishonesty or collective cheating[2] is a field—and a term—that encompasses many phenomena. How collective cheating is defined, and how it is operationalised, depends on the nuances and specifics of the targeted behaviour. Some authors have focused on academic collective dishonesty in educational contexts (e.g., Pulfrey et al., 2018), others on workplaces (e.g., Castille & Fultz, 2018) or in everyday life (e.g., Azar et al., 2013), and others on more specific phenomena such as corruption or bribery (e.g., Abbink, 2004; Köbis et al., 2022; Rullo et al., 2023), or contract cheating (e.g., Kelly & Stevenson, 2021).

**Definitions.** The specifics of the many behaviours that fall under the umbrella of the term collective cheating, the group dynamics involved, and the different contexts in which they take place have led to multiple descriptions of this collective phenomenon. For instance, in their analysis of the Volkswagen scandal, in which the company equipped its vehicles with fraudulent software to cheat in pollution controls, Castille and Fultz (2018, p. 95) described collective cheating as "cheating that occurs when individuals of various backgrounds interact to create, implement, and sustain solutions to problems that violate ethical obligations or norms." In their meta-analysis on collaborative dishonesty, Leib et al. (2021, pp. 1241-1242) defined collective cheating as “lies conducted in (a) a group setting, (b) where more than one group member can misreport the true state of the world, (c) group members’ outcomes are interdependent, and (d) at least one group member benefits from the group’s dishonesty.” And finally, if we consider a broader definition, for Pulfrey et al. (2018) collective cheating means "cheating together with ingroup peers" (p. 764).

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[2] As collective cheating is an action, a practice of dishonesty, i.e., the fact of being dishonest understood in a broad sense, we use the two terms interchangeably in this manuscript.

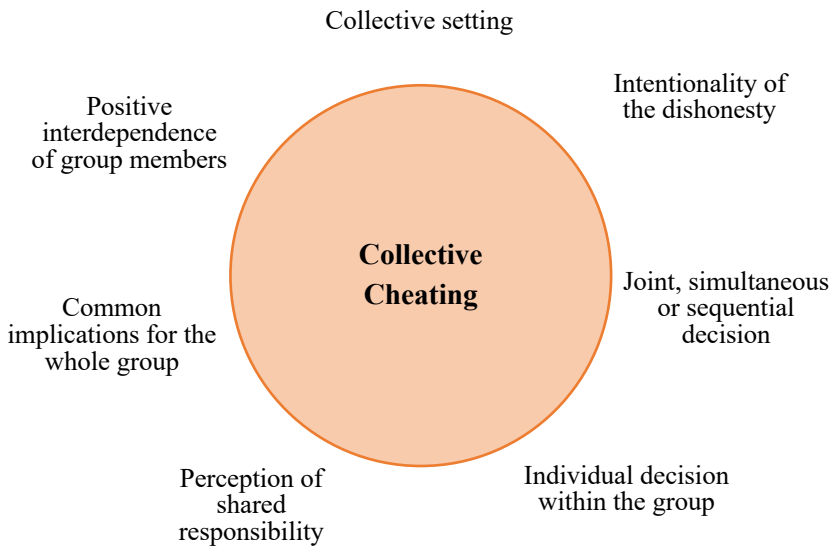
Cheating in groups appears to be a phenomenon that encompasses different decision-making structures. Referring to tasks employed in experimental research, Leib et al. (2021), in their meta-analysis, grouped the decision-making structures of collective dishonesty into three categories: (1) "Groups of participants interact with one another, either face to face or via an online platform, and then make one *collective* decision" (joint decision structure, p. 1242); (2) "Each group member makes a decision individually and *simultaneously*. Decisions are interdependent and determine the group's outcome" (simultaneous decision structure, p. 1242); and (3) "Each group member makes a decision individually and *sequentially*. Decisions are interdependent and determine the group's outcome" (sequential decision structure, p. 1245).

In defining this phenomenon, it is important to point out two major distinctions between collective dishonesty on the one hand, and rebellion and reactance on the other hand. Cheating could be sometimes understood as an act of rebellion against the system and the culture in place (e.g., Redding, 2016). However, contrary to what we defined as collective cheating, rebellion implies a desire to change the situation in place, the status quo, which is not an element—or a motive—of ordinary collective cheating. The attribution of blame to the context or system could be found, in collective cheating, as a mechanism for justifying behaviours that violates established rules, but it is not a key motivation, as is, for example, the desire to benefit. For its part, psychological reactance (Brehm, 1966) is a response to a real or illusory restriction on individual freedom. This unpleasant motivational state results in a desire to resist this constraint of autonomy, and it can also take the form of cheating or other forms of behaviour aimed at regaining the freedom perceived as lost, such as incivility, dissent, and resistance (e.g., Mirick, 2016). However, although, as for rebellion, psychological reactance can sometimes be an antecedent of cheating in group, it is not a key motivation for collective dishonesty defined in this paper.

**Common Characteristics.** Although definitions of collective dishonesty may vary depending on the target behaviour and its operationalization, in all definitions certain characteristics are recurrent and are of importance. Figure 1 provides an overview of the seven main features of the collective cheating phenomenon, based on the definitions presented above. (1) Collective cheating takes place in a *collective setting*, either a dyad or a more numerous group, either in presence (e.g., passing an assignment to a schoolmate) or in absence of the other members (e.g., in routinized cheating within an organization); (2) the behaviour implies *intentionality*, as group members are aware of moral standards and of their non-compliance with rules when they engage in collective cheating; (3) cheating can be carried out *jointly, simultaneously, or sequentially*; (4) group members can *individually decide* whether to be honest or not within this collective organisation, either by commission (e.g., actively participating) or by omission (e.g., accepting, even tacitly), which (5) implied that group members clearly perceive some *shared responsibility*; (6) although the dishonest reflection, decision or act may be individual, the implications, for instance *benefits and costs*, do not involve only an individual but the whole group; (7) therefore, as the decision to cheat is to the advantage of all group members or only for one of them, group members are *positively interdependent* in terms of goals and outcomes.

**Figure 1**

*Summary of the Main Characteristics of Collective Cheating*




**Collective vs. individual cheating.** A consistent finding highlighted by the literature on collective cheating is that people are more dishonest when they are and act in groups than when they are acting individually (e.g., Bonfim & Silva, 2021; Cohen et al., 2009; Conrads et al., 2013; Danilov et al., 2013; Dannenberg & Khachatryan, 2020; Gross et al., 2018; Kocher et al., 2018; Korbel, 2017; Lohse & Simon, 2021; Nikolova et al., 2018; Soraperra et al., 2017; Weisel & Shalvi, 2015; Wouda et al., 2017). Kocher et al. (2018) called such a phenomenon a "dishonesty shift in groups", to underline the increase in dishonesty in collective contexts. Thus, before we delve into the mechanisms involved and predictors of collective cheating, we need to tackle a basic question: How is cheating in groups different from individual cheating?

Individual cheating is a behaviour that the individual performs alone, defined as "individually bending or breaking rules to gain an unfair advantage for self or others" (van Prooijen & van Lange, 2016, p. 3). Compared to individual cheating, the main peculiarity of collective cheating is obviously its collective nature. Engaging in dishonesty in a group is an

inherently different experience from acting dishonestly alone. Indeed, when asked to describe how they experienced their (academic) collective cheating, participants said that cheating in a group was a time of solidarity, help and cooperation (Zanetti & Butera, 2022). This finding is very relevant because it points out a crucial difference between individual and collective cheating: the presence of others as "partners in crime" or accomplices. The importance of the social dimension of cheating has already been demonstrated for individual dishonesty. Indeed, even for individual cheating, research has shown that dishonesty is more accepted or frequent if it has a prosocial character, if it benefits others (e.g., Erat & Gneezy, 2012; Gino et al., 2013; Levine & Schweitzer, 2014; Parra, 2022; Wiltermuth, 2011).

The collective nature of collective cheating also implies the perception of shared action—and responsibility—within the group. The fact that other people share in the wrongdoing immediately leads the individual to perceive that he or she is not the only one responsible. As we will discuss in the section related to moral costs, the presence of the others can facilitate justification mechanisms (e.g., Bandura, 1990) involving diffusion of responsibility. Although individuals are accountable for their choice to cheat and their involvement in cheating, the collective nature of this behaviour seems to affect the perception that those involved in collective cheating have of their own responsibility. When cheating in a group, responsibility is spread among all members and thus the perception is that individual responsibility is reduced (e.g., Conrads et al., 2013; Feldman & Rosen, 1978; Mazar & Aggarwal, 2011; Rowan et al., 2022; Zanetti et al., 2023a). This is only possible in collective settings.

**Murdock and Anderman's Individual Cheating Framework**

Individual cheating has been the subject of much research since the 1980s (e.g., Corcoran & Rotter, 1987; Houston, 1983) and even before (e.g., Drake, 1941). Conducted in a large part in academic settings, the numerous studies in this area have resulted in a rich

literature providing a clear picture of the predictors and mechanisms underlying this behaviour. In 2006, Murdock and Anderman proposed a motivational framework aiming to structure and organize the existing evidence in this field. They took into account individuals' personal and motivational characteristics (e.g., personal ability, prior achievement, self-efficacy, and goal orientation) as well as contextual features, i.e. proximal-level influences such as family, peers, and teachers, impacting the individual decision to cheat (e.g., difficulty of the task, teachers' skills). Based on these factors, they proposed a framework in which the individual propensity to cheat could be explained by students' considerations regarding three main motivational mechanisms. As shown in Figure 2, these mechanisms pertain to "(a) students' goals, (b) students' expectations for accomplishing those goals, and (c) students' assessments of the costs associated with achieving those goals" (Murdock & Anderman, 2006, p.129). The three mechanisms have been shown to be involved in the decision-making process related to individual cheating behaviour. In turn, these mechanisms are influenced by personal and contextual factors, for which the authors provide some examples.

As they discussed, students' propensity to cheat was found to be higher if (a) their motivations were extrinsic, namely when they engaged in an activity for external reasons or consequences (vs. intrinsic, when the engagement was for interest, pleasure, or choice, according to the self-determination theory of Deci and Ryan, 1985). Students' propensity to cheat was also higher if students' goals were performance oriented, i.e., with the aim of achieving high grades or demonstrating their own competence to others (vs. mastery oriented, the desire to learn and progress, in reference to the achievement goals theory of Elliot and McGregor, 2001). Indeed, research has shown that cheating is more prevalent among students who embrace performance goals (vs. mastery goals) (e.g., Anderman et al., 1998; Jordan, 2001; Murdock et al., 2001, 2004). For instance, a reason that students frequently give for academic cheating is the desire to improve grades (Murdock & Anderman, 2006). Moreover,

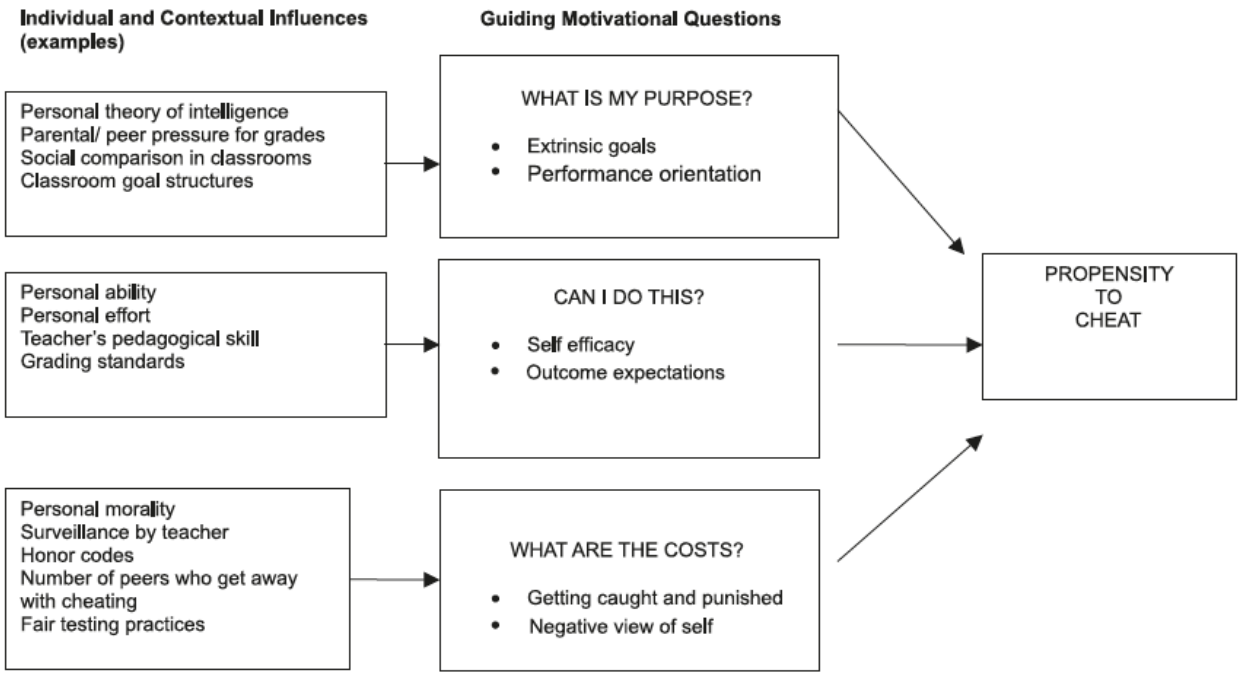
research has shown that social pressure for success, the goal structure of the context (e.g., the family or the classroom), or the perceived competitiveness of the environment are relevant factors influencing goals and motivation, and consequently individuals' cheating decisions (e.g., Anderman et al., 1998; Murdock et al., 2001; Perry et al., 1990; Smith et al., 1972).

Students' propensity to cheat was also found to be higher if (b) their sense of self-efficacy (Bandura, 1977)—namely their beliefs concerning their own efficacy and ability to succeed at a specific task, or their expectation to succeed (e.g., Eccles, 1983; Wigfield & Eccles, 2000)—was low. For example, several studies have shown a negative relation between cheating and self-efficacy or fear of failure (e.g., Calabrese & Cochran, 1990; Finn & Frone, 2004; Murdock et al., 2001). Indeed, research has shown that the teacher's skills and behaviour (e.g., (un)fairness, pedagogy, and competence) impacted students' cheating or its acceptance because of the influence of these pedagogical elements on students' self-efficacy (e.g., Jensen et al., 2002; Murdock et al., 2004).

Finally, students have been found to cheat more if (c) the anticipated consequence or psychological costs, i.e., the negative impact on image and self-concept, related to behaving dishonestly, were perceived as low and/or easily manageable. Indeed, research has shown that the perceived likelihood of being caught as well as the severity of the punishment or the difficulty of cheating reduced individual cheating (e.g., Covey et al., 1989; Graham et al., 1994; Hollinger & Lanza-Kaduce, 1996; Houston, 1983, 1986). Moreover, when psychological costs—or morality—were higher or salient, individual cheating was reduced (e.g., Mazar et al., 2008).

**Figure 2**

*Murdock and Anderman's Framework for Individual Cheating (2006)*




## A Contextual-Motivational Model of Collective Cheating

Following the publication of a wealth of studies on individual cheating, research has later focused on the collective form of dishonesty, rapidly increasing the amount of evidence related to this behaviour. Many studies have explored the collective cheating phenomena, investigating the peculiarity of this collective behaviour in terms of predictors and mechanisms. Below, we propose a conceptual framework detailing the factors motivating or otherwise promoting collective cheating (see Figure 3). Our aim was to integrate the diverse body of work on collective dishonesty, conducted within a broad array of fields including psychology, economics, ethics, and criminology, using a contextual-motivational perspective similar to the one adopted by Murdock and Anderman in their model of individual cheating. Collective cheating has been operationalized in multiple ways, for example as academic cheating, corruption, or bribery, as well as with different experimental paradigms, requiring

different decision structures (joint, simultaneous, or sequential, see Leib et al., 2021 for a meta-analysis).

**Why a Contextual-Motivational Model of Collective Cheating?**

Motivation has been shown to be related to many facets of behaviour, such as its initiation, its persistence, the energy invested, and its performance (e.g., Ryan & Deci, 2000a). As Murdock and Anderman's model depicts in the case of individual academic cheating, it is the responses of individuals to specific motivational issues that lead to the development of the propensity to cheat or not. As they argued, "Cheating is a motivated behavior, in that a student ultimately must decide whether or not to cross the line and actually engage in that behavior" (p. 141).

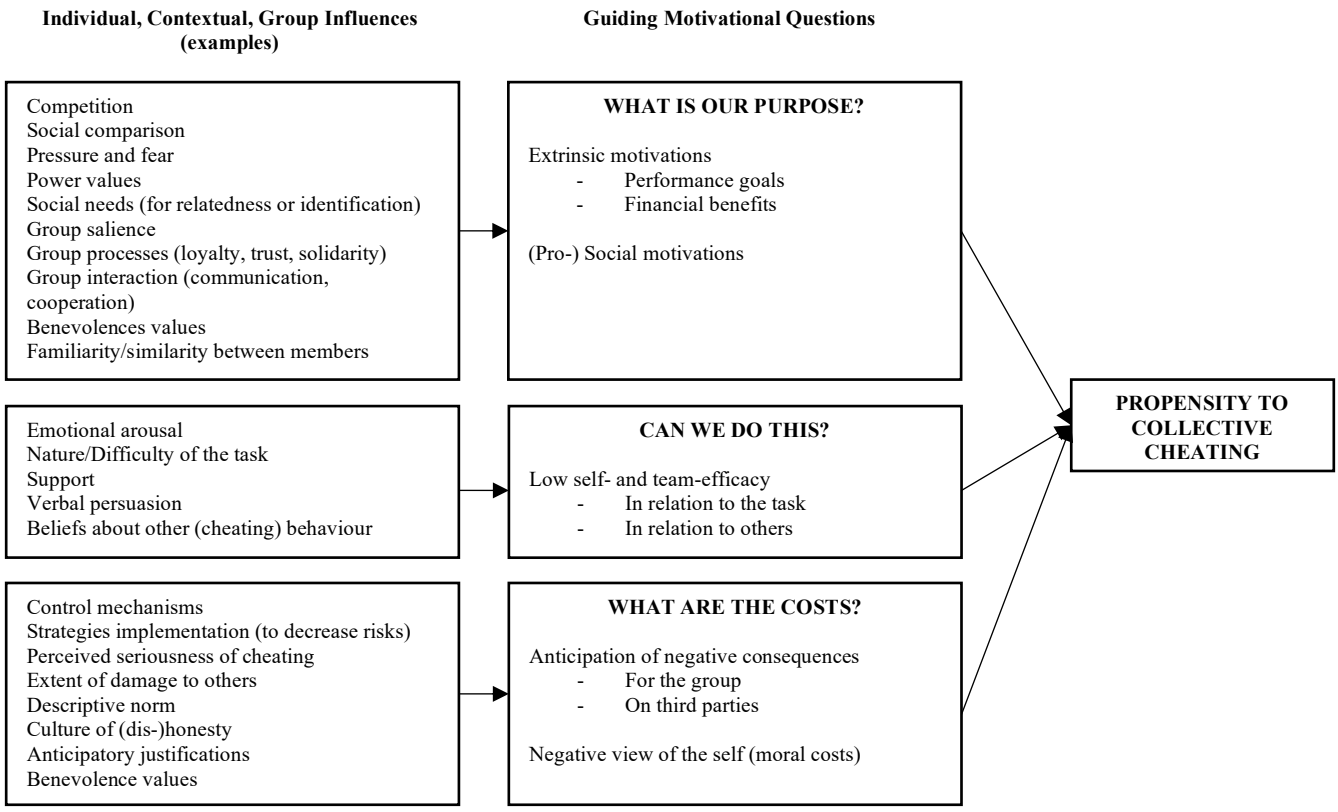
Considering people's motivations and adopting a motivational perspective when considering collective cheating means exploring in depth the forces pushing people and groups to develop the intention to and engagement in collective cheating. The perspective introduced by Murdock and Anderman not only allows for the exploration of the motivations predicting cheating behaviour, but also addresses the individual and contextual antecedents that influence the adoption of a specific response to the three motivational questions. Likewise, in our framework we also wanted to emphasise the importance of context in the study of collective cheating. Context, understood as descriptive norms and local culture, has been shown to have a crucial impact on collective cheating as well as on its chronic implementation (e.g., Bonfim & Silva, 2019; Castille & Fultz, 2018; Dunaiev & Khadjavi, 2021; Ferguson et al., 2022; Zanetti & Butera, 2022). For this reason, we have chosen to emphasise both the contextual and motivational components in our framework. Understanding what motivates collective cheating as well as which contextual factors impact these motives could provide better understanding of this phenomenon, but also have the

practical benefit of predicting in what circumstances it is likely to occur, which may help take steps to prevent it.

Murdock and Anderman's model had a second objective, that of reflecting in part the timeline of an individual cheating event. In this regard, we can draw a parallel with the qualitative study of Zanetti and Butera (2022) which, with the results that emerged from the participants' narrations, provided an insight into the sequence of mechanisms that organize the whole collective cheating event. Indeed, these authors retraced the chronology of collective cheating, with seven themes, from its beginnings to its social impact on the group and its members. In this chronology, the motives and goals of this group behaviour appeared as the first theme, followed by themes relating to the birth and organisation of cheating, and finally with considerations of costs, risks, and moral justifications. Thus, in the present model the question of goals comes first—because motivation is central in the emergence of behaviour—as does the question of the perception of efficacy in achieving these goals. Then the components relating to the management of the risks and costs of cheating behaviour appear.

**Figure 3**

*An Integrated Contextual-Motivational Model of Collective Cheating*




## A Structured Review of the Literature on Collective Cheating

### Literature and Selection Process

In reviewing the literature in the field of collective dishonesty, we took as a starting point the recent meta-analysis on collaborative dishonesty of Leib et al. (2021). We focused primarily on the experimental studies included in the meta-analysis. As a second step, we looked for articles published since Leib et al.'s meta-analysis and citing this work. In addition, we took into consideration other contributions from different literatures that were not included in the meta-analysis but that seemed relevant to our model. For instance, we also considered studies that did not involve financial gain associated with cheating (which was a feature of the studies included in the Leib et al.s' meta-analysis) as well as correlational or qualitative studies (e.g., Castille & Fultz, 2018; Pulfrey et al., 2018; Zanetti & Butera, 2022).

From this pool, to build our contextual-motivational model, we selected papers which satisfied two fundamental criteria: a) the collective character of cheating, i.e. cheating was done in a group, and b) the study of motivational or contextual processes involved in collective cheating. However, papers that did not meet these two criteria could be included in this paper (but not in the model) as theoretical support, as is the case with the many theoretical contributions underpinning our model.

### Question #1: What is Our Purpose?

As with Murdock and Anderman's individual cheating framework, the first question we considered was the nature of the group's goals and motivations as predictors of collective cheating. What goals are more likely to lead to group members cheating together?

A first answer can be found in a qualitative study in educational settings where participants were asked about a past event of collective cheating (Zanetti & Butera, 2022). Based on the participants' recollections, three main motivations to cheat in a group emerged, related to performance, financial benefits, and social concerns. The first two motivations are clearly extrinsic and externally regulated (Deci & Ryan, 1985; Ryan & Deci, 2000a). Indeed, motives related to performance were driven by pressures such as the pursuit of a valued outcome or success, as well as the avoidance of failure. For financial motivation, the extrinsic benefit is clear: to gain a financial advantage. The last set of motives, (pro-) social motivations, are aimed at integration within a group or the protection of one's own group. These motives are extrinsic because they are characterised by the pursuit of social appreciation and approval, typical of extrinsic introjected motivation (Ryan & Deci, 2000a). However, these motives could also be driven by other components, beyond the merely extrinsic concept, such as the need for relatedness (Ryan & Deci, 2000b). According to these authors, relatedness is one of three basic psychological needs, and refers to the desire to feel connected to others and feel part of a group. Likewise, Social Identity Theory proposes that

people have a need to identify with a social group for personal well-being and self-esteem (e.g., Tajfel, 1979; Tajfel & Turner, 1986).

It is interesting to note that in the motivations listed below, there is a value associated with the task—the cheated task—as defined by the expectancy-value theory of motivation (e.g., Eccles & Wigfield, 2020; Wigfield & Eccles, 2000). Indeed, this theory introduces an important theoretical element that influences motivated choices: the subjective value of the task, as a reason for engagement—or in our case for cheating when necessary—in the task. The theory postulates four main sources impacting the value of the task, namely 1) interest-enjoyment value, i.e. the intrinsic value of the task; 2) attainment value, i.e. the importance for the self—in terms of identity—to perform the task (well); 3) utility value, i.e. the degree to which the task relates to important personal goals and 4) relative cost; i.e. effort, opportunity and emotional costs associated with commitment to the task (e.g., Eccles & Wigfield, 2020). From this perspective, people engage in collective cheating either for reasons of utility (linked to extrinsic benefits) or because of the importance, namely the attainment value, that performing the task has for the self or for the group in identity terms. As defined above, in collective cheating experiences group members' goals are interdependent. Thus, if utility value is a reason for cheating, such value concerns all the members of the group: In this form of dishonesty, utility values need to be coordinated—because group members are interdependent—although they are not necessarily the same for all members.

## Extrinsic Motivations

### *Performance Goals*

In the qualitative study of Zanetti and Butera (2022), participants were asked to describe a collective cheating experience at school. One of the main reasons people gave for cheating was extrinsic benefits such as performance and results: Participants said they had cheated to perform better or avoid a bad performance, for instance. Thus, their motives can be

characterized as approach or avoidance achievement goals (e.g., Elliot & McGregor, 2001), goals pertaining to demonstrating normative competence (or avoiding incompetence). These motivations have been shown to be typical of *competitive contexts* rich in *social comparison* (Festinger, 1954). Indeed, cheating could be considered a competitive behaviour, in either inter-individual or inter-group contexts (Butera et al., 2021).

Some studies induced a competitive climate between groups or a negative intergroup dependency (e.g., Dannenberg & Khachatryan, 2020; Pulfrey et al., 2018; Sutter, 2009), which led to dishonest behaviours, via the development of a specific set of extrinsic motivations. Dannenberg and Khachatryan (2020) investigated the role of competition in individual vs. collective settings. In their experiment, two parties (participating either in groups or as individuals) competed in a die-rolling task, where the objective was to report high numbers on the dice to maximise the score. They found not only that inter-group competition increased dishonesty compared to inter-individual competition, but also that groups showed more cheating when the other party was a group than when the other party was an individual. Other research has highlighted the role that contexts and leaderships rich in competitiveness, but also *pressures* or *fear*, have in the development of a motivation to cheat. For example, in their case study of Volkswagen's emission scandal, Castille and Fultz (2018) argued that "collaborative cheating emerges as a consequence of organizational leadership that, in response to constraints on organizational performance, issues credible threats to subordinates" (p. 99). Interestingly, regarding the influence of a leader, Bonfim and Silva (2018) compared dishonesty in groups with and without the presence of a leader in a die-rolling experiment. Results showed that the simple presence of a leader in a group, endorsing a superior hierarchical function and financial advantages, had a strong influence on the dishonesty of the entire group, resulting in an increase in cheating.

Relatedly, competitive personal values can also motivate cheating. For example, *power values*, referring to valuing "social status and prestige, control or dominance over people and resources" (Schwartz et al., 2012, p. 664), are self-enhancement values, oriented toward individual interest and achievement, and underlining a propensity for extrinsic and performance-related motivations. Pulfrey et al. (2018, Study 4) tested the influence of power values on collective cheating behaviour, on a logical task, in groups of acquaintances or strangers. In a competitive setting, when group members knew each other (vs. strangers), adherence to power values positively predicted collective cheating behaviour.

### *Financial Benefits*

Another motive for collective dishonesty is financial gain. Although motivations were not often explored as such, most of the experimental studies involved treatments where participants could influence the magnitude of financial rewards by cheating collectively (e.g., Conrads et al., 2013; Gross et al., 2018; Korbel, 2017; Nikolova et al., 2018; Soraperra et al., 2017; Weisel & Shalvi, 2015). Under various decision structures, participants had the opportunity to increase their earnings by cheating collectively, which they often did, highlighting again an extrinsic motivation to cheat collectively.

In the aforementioned meta-analysis of Leib et al. (2021), it appeared that, in the case of a sequential decision structure (i.e., one member made a decision and the other did so afterwards), dishonesty was predicted by financial gains: more profits, more collective cheating. Thielmann et al. (2021) ran an experiment using a die-rolling paradigm where the first participant could lie to get a payoff. This payoff would only be obtained if a second participant confirmed the response—unethical or not—of the first. The first participant had the opportunity to offer a bribe to the second participant to encourage her or him to align to the first response. Results showed that the majority of the second participants (almost 86%), i.e., those who had to verify the veracity of the first participant's response, engaged in

collective cheating, concealing the dishonesty of the first participant. Interestingly, the amount of the bribe the first participants offered—to cover up for the lie—was found to increase the likelihood that the second participants accepted the bribe and engaged in collective cheating.

Lohse and Simon (2021) employed a tax-compliance experiment where participants had to make decision concerning an income they had to report jointly or individually. They also investigated the communication between members in a chat participants could use for coordinating on the report—they could cheat to increase the gain. Results showed that one of the main arguments discussed in the group was related to monetary consequences.

Even in educational settings, the monetary motivation has been shown to be a reason for collective cheating: Participants reported to have sometimes cheated in order to obtain a financial gain, for example, by getting paid to help another person (Zanetti & Butera, 2022). Research on contract cheating, including the behaviour of paying someone or a service to get some work done, has shown this facet of collective cheating, because one of the two parties asks for money to meet a request for assistance (e.g., Clarke & Lancaster, 2013).

**Social Motivations**

Collective cheating may be motivated by social reasons, such as to be part of the group, to access to and to maintain a positive social identity. In their qualitative study exploring collective dishonesty in academic settings, Zanetti and Butera (2022) found that students engaged in academic cheating in order to be part of the group or to help members who were in trouble. In these cases, the *need for relatedness* (e.g., Ryan & Deci, 2000b) appeared to motivate people to participate in collective dishonesty, via the development of a motivation regulated by a social reason: to become an ingroup member (Zanetti & Butera, 2022). Indeed, some authors have argued that the *need for identification* is crucial for engagement in corrupt behaviour via the mechanism of ingroup loyalty (Anand et al., 2004).

Nikolova et al. (2018) demonstrated the extent to which *social needs* could lead to engagement in collective cheating. In addition to showing that dyads cheated more than individuals on a quiz (Study 1), they showed that the manipulation of bonding goals in dyads (working with a partner sharing the same vs. the opposite political orientation) influenced collective cheating. In their experiment, dyads had to make a joint decision concerning whether they wanted a (unfair) bonus. Participants in dyads with bonding goals cheated more, i.e., were more likely to retain the unjustified bonus, and expressed more feeling of bonding after doing so. A mediation analysis showed that the relationship between bonding goals (vs. non-bonding) and the feeling of bonding after the decision was mediated by the joint unethical (rather than joint ethical) decision. Interestingly, a parallel can be drawn with a study on individual cheating, showing that given the opportunity for financial rewards, participants (males) cheated more when they received oxytocin (Shalvi & De Dreu, 2014) than when they received a placebo. Even this result is about individual cheating, it is interesting because oxytocin is a hormone that promotes bonding, and therefore could make the group salient, pushing people to protect it. In the same vein, oxytocin has been found to increase parochial behaviour (Israel et al., 2012), i.e., behaviour aimed to favour the ingroup.

Within the framework of social identity theory, it seems plausible that collective cheating could be driven by the motivation to protect the ingroup and its social identity, especially in situations where the saliency of the group is emphasised (e.g., Pulfrey et al., 2018). In their meta-analysis, Leib et al. (2021) showed that a joint decision structure (i.e., the group members made a joint decision) tended to result in greater collective dishonesty than when decisions were made simultaneously or sequentially. They argued that this may have occurred because joint decisions make the group's identity, bonds, and common concerns salient.

Group saliency could also be created via the type of payoff the reward group members expect. Indeed, in experiments using die-rolling paradigm, scholars found that equal payoffs to group members promoted dishonesty (e.g., Conrads et al., 2013; Weisel & Shalvi, 2015; Wouda et al., 2017). In their tax-compliance experiment, Lohse and Simon (2021) showed that cheating was greater when benefits and costs were shared between members than when they were not. Conversely, in a dyadic die-rolling experiment, dishonesty decreased when payoffs were not aligned and a "conflict of interest" between two participants was created, for instance, if the first participant's strategy for gaining more did not match that of the second (Della Valle et al., 2017). The authors suggested that this result may have occurred because individuals focused on inequality instead of the maximisation of the gain. Parra (2022) ran an experiment where participants in dyads had to indicate individually whether the colour of a card was the same as the previously imagined or chosen colour (depending on treatments and the individual's position as first or second player). Two participants worked together under different treatments. Results focused on the behaviour of the first participant. In the sequential condition, the first participant's dishonesty was lower when their cheating only benefited themself and had no effect on the payoff of the second participant than when the first participants could cheat to maximise the gain of both participants. As the author suggested, this finding highlighted that when prosocial motives were present (cheating for the group's benefit), dishonesty was more frequent than when it benefited only the individual.

Several authors also found that *interactions* between group members such as *communication* (e.g., Kocher et al., 2018; Lohse & Simon, 2021) or *cooperation* (operationalised as repeated contacts or long-term collaboration; Abbink, 2004; Zanetti et al., 2023b) impact collective cheating. Using an experimental die-rolling task, Kocher et al. (2018) explored individual and collective cheating behaviour. In their two collective treatments (which differed in terms of payoff commonalities), the opportunity to chat was

given to the group. In addition to finding more cheating in groups (vs. individuals), analysing the content of the communication between members, the authors uncovered a sizeable proportion of shared arguments in favour of dishonesty. As they argued, it is therefore through this interaction (not possible for the individual alone), namely the exchange of arguments and views within the groups, that members could modify their beliefs and perceptions and develop a new and flexible norm of (dis-)honesty. In a study on public corruption, Abbink (2004) showed that one-time interaction (vs. setting where people interact repeatedly) decreased bribery. In another experiment, groups engaged in collective cheating to a greater extent when group members stayed together during several tasks than when the groups constantly changed partners across tasks (Zanetti et al., 2023b).

*Group processes*, such as *loyalty, trust*, and *solidarity*, are other components that seem to play a role in collective cheating experiences. If we look to the theory of moral foundations (e.g., Graham et al., 2012; Haidt & Joseph, 2004), loyalty (vs. betrayal) is consider a key moral foundation which, in an evolutionary way, is anchored in the threat to the group, promoting cohesive and coalitional behaviours: When the group is/feels threatened, dishonest coalitions and engagement in collective dishonesty can exist to benefit the ingroup, safeguard its image and the group members. For instance, research showed that people are less likely to report a member of their own group compared to an outgroup member (Rullo et al., 2023). Moreover, Hildreth et al. (2016, Study 5a & 5b) asked a group of three participants to discuss loyalty (vs. the weather, for the control condition) and then they completed a problem-solving task where they could cheat to maximise the group benefit. Participants were told that other groups were doing the same task and that a financial bonus would be given to the group with the highest average. Inter-group competition was manipulated in the task instructions. In the high-competition condition, the instructions highlighted the competitiveness of the setting and the relation between group performance and gain (vs. low-competition, where there was no

such message). Competition increased cheating among participants primed with loyalty. Interestingly, even if the outcome was individual cheating, in another study, Hildreth et al. (2016, Study 4) found that for members loyal to a fraternity, competition between (fraternities) houses increased individual cheating, because it was cheating that benefitted the fraternity itself.

Loyalty, trust among members, and solidarity were elements mentioned by participants as key motives for engaging in collective cheating in academic settings (Zanetti & Butera, 2022). When recalling past collective cheating, participants particularly mentioned the relationships within the ingroup and the trust that bound the members together, which seemed to make reporting impossible (a sort of code of silence, as emphasised by the authors). In academic settings, regarding assignment outsourcing or, more globally, academic dishonesty, students reported asking friends, family, or classmates—all third parties who were close to them—for support and help (Awdry, 2021; Bretag et al., 2019; Đogaš et al., 2014).

Pulfrey et al. (2018) explored the link between values and collective cheating in a series of experiments where competition was made salient. They highlighted the role of the competitiveness of the context in instances of collective cheating by showing that in these competitive settings, *benevolence values*, i.e., concern for the well-being of the people we care about (Schwartz et al., 2012), positively predicted the acceptance of collective cheating. Moreover, *familiarity* and *similarity* between group members have been shown to increase collective cheating (Irlenbusch et al., 2020; Pulfrey et al., 2018, Study 4). Indeed, in the experiment of Pulfrey et al. (2018), dyads where participants knew each other and where group salience was reinforced with a similarity task (search for commonalities) cheated more than groups of strangers. A similar result was found by Irlenbusch et al. (2020, Study 1). They manipulated the perception of similarity (vs. dissimilarity) between two group members as well as the decision structure (individual vs. group decision). In group settings, participants in

the similarity condition showed more collective cheating on a die-rolling task. Interestingly, in a second study with the same paradigm, Irlenbusch et al. (2020, Study 2) found that when group members focused on similarity within the ingroup (vs. with a person not from the ingroup), cheating behaviour tended to be greater.

Also related to group dynamics, Barr and Michailidou (2017) experimentally tested the role of having an accomplice in a dice rolling task. In one condition, two participants determined each other's payoffs by the number they reported after each draw, and in the other condition only one participant determined the payoffs, while the second was passive. Although in both experimental conditions people cheated (relative to the assumption of honesty, for which all the faces of the dice, and therefore all the numbers, would be reported at the same percentage), cheating increased in the condition that included a potential partner in crime.

**Summary**

The research reviewed above brings important insights into the first motivational question asked in our model, namely “What is our purpose”. Two major sets of motives appeared to play a central role in driving people to behave dishonestly in groups. The first set of motivations are related to extrinsic factors, such as performance and financial benefits. Engagement in collective cheating could be driven by the desire for success, achievement, or maximisation of rewards. These results are similar to those found in individual cheating research (Murdock & Anderman, 2006), with a focus on extrinsic motivations and performance orientation.

The second motivation leading people to cheat in groups is related to social concerns and needs, such as belonging to a group or the protection of the welfare of the ingroup. This appears to be the major difference between individual and collective cheating, revealing the (pro-)social bases of collective cheating. Indeed, Murdock and Anderman did not consider

these motivations because, as they argued, the "focus is primarily on students' academic purposes, because social goals (i.e., belonging, friendship) have been minimally examined in relation to cheating" (Murdock & Anderman, 2006, p. 130). On the contrary, the work reviewed here showed that collective cheating could have a strong focus on social motivations—being dishonest for the sake of the group or its members—as a main driver of this form of dishonesty.

In summary, works on collective cheating emphasised the importance of extrinsic motives, as in individual dishonesty. However, in collective cheating, prosocial motives or motives related to group processes turn out to be important reasons for cheating. Of particular importance is social identity and the protection of such identity for group members who are also prepared to engage in dishonesty to achieve their ends.

Finally, we would like to point out that cheating, in a broader way, could also derive from a lack of motivation. In the educational field, some survey studies, which focused on individual cheating and individual differences, found that lack of motivation (amotivation according to Ryan and Deci, 2000a) drives some students to academic cheating (e.g., Orosz, 2013; Park et al., 2013). In these cases, people cheat because they do not care; otherwise stated, in terms of expectancy-value theory of motivation, performing the activity is perceived as having no value (e.g., Eccles & Wigfield, 2020; Wigfield & Eccles, 2000). Although the role of the lack of motivation is important to note, amotivation is often an individual issue, which is not addressed in the literature of collective cheating; this is why it does not appear in our framework.

### Question #2: Can We Do This?

The second question whose answer may determine the likelihood of cheating is that of group efficacy regarding the capacity to achieve the results expected by group members. Do group members feel capable and competent enough to succeed in their goals?

Team-efficacy could be defined as “a group’s shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments” (Bandura, 1997, p. 477). As explain by Bandura (1997), self-efficacy beliefs—and here we made a parallel with team-efficacy—could vary according to three main dimensions: a) the level, the level of the performance pursued, i.e. “the range of perceived capability for a given person is measured against levels of task demands that represent varying degrees of challenge or impediment to successful performance” (p. 42), b) the strength, “Weak efficacy beliefs are easily negated by discon-firming experiences, whereas people who have a tenacious belief in their capabilities will persevere in their efforts despite innumerable difficulties and obstacles” (p. 43), and c) the generality, i.e. “people may judge themselves efficacious across a wide range of activities or only in certain domain of functioning” (p. 43). These explanations are important because they reveal a key element—related to a), the level of attainment—of this efficacy belief: A person or a group may not feel competent enough to perform a specific task (e.g., pass an exam), or a person or a group may not feel capable enough to perform better than others and be the best (e.g., win a competition). In both cases, regardless of the actual level of skill, it is the perception of the individual or the group, in relation to the goals set—“simply” perform the task or outperform/win, that counts and is discussed here as influence of collective cheating.

Team-efficacy has, to our knowledge, not been investigated as such in collective cheating situations. However, some studies have investigated individual perception of self- or team-efficacy in cheating situations involving others, through proxies. For instance, stress could be considered a proxy because emotional arousal is one source of information and influence on self-efficacy (Bandura, 1977). Instructor support may also be an indicator (e.g., Ferguson et al., 2022) because of its link with students’ perception of efficacy, e.g., perceived competence to succeed at complex tasks. Finally, self- and team-efficacy has been explored

via the beliefs about others' behaviour in terms of cheating (e.g., Dannenberg & Khachatryan, 2020). Indeed, expectations about the behaviour of others can have a direct impact on self- and team-efficacy: If others cheat, will the group be able to succeed?

Drawing parallels with the literature on individual cheating, when a group perceives low team-efficacy (or a group member has low self-efficacy), with low performance or competence expectations, collective cheating would be a—or the only—viable pathway to success. Indeed, regarding the link between team-efficacy and performance, a meta-analysis on team-efficacy (Gully et al., 2002) found a positive relation between team-efficacy and performance, stronger in situations of interdependence. This means that the more members of the group believe they can successfully accomplish a given task and feel capable, the better their performance will be. In their meta-analysis, Gully et al. (2002) also highlighted interdependence (as a general construct involving task, goals and outcomes interdependences) between members as a mediator of interest in the positive relation between team-efficacy and performance.

**Team-Efficacy in Relation to the Task**

Perceiving a task as difficult and other hindering contextual characteristics (in education settings, examples are grading standard, classroom goals orientation, and peers' performance, see Murdock & Anderman, 2006) have been shown to impact the perception of (individual) self-efficacy. By the same logic, the structure of the task and features of the context that groups face could have an impact on team-efficacy and the decision of the group to cheat together.

Indeed, the judgment of a group on its efficacy seems to be influenced by the same sources as self-efficacy (Bandura, 1997). For instance, *emotional arousal* is one of these sources of influence because "stressful and taxing situations generally elicit emotional arousal that, depending on the circumstances, might have informative value concerning personal [or

collective] competency" (Bandura, 1977, p. 198). In research on collective cheating, there is evidence that the *nature and difficulty of a task* impacts the group's (or a group member's) sense of competence. In relation to performance/academic benefits of collective cheating (see previous section), Zanetti and Butera (2022) found that students engaged in this behaviour because they felt in trouble. For instance, they cheated collectively during exams when they needed to reassure themselves about their abilities in a specific task. These beliefs or feelings can be understood as low self- or team-efficacy leading a student to ask for "help" or, for the group, employing cheating as a mean to reach an expected result.

Ferguson et al. (2022) explored outsourcing behaviours, such as contract cheating, though a self-reported survey including measures of integrity, stress, school environment, etc. They found that participants who acknowledged having engaged in commercial contract cheating, i.e., getting someone else/a service to do and pay for work, expressed lower (individual) self-efficacy and mastery scores than those who did not. However, this result was not found for sharing behaviours, defined as sharing information on assignments/tests with others. Interestingly, in the same project, they included measures related to stress, which can be understood as sources of influence on perceived self- and team-efficacy. Results showed that participants who engaged in contract cheating (commercial and sharing) reported higher individual levels of stress, particularly for total, work-related, school-related stress and school-related role strain scales (Ferguson et al., 2022).

A large proportion of the experimental studies on collective cheating used paradigms that did not involve (cognitive) skills of participants (e.g., Azar et al., 2013). Often, these studies involved dice-rolling paradigms (e.g., Barr & Michailidou, 2017; Dannenberg & Khachatryan, 2020; Kocher et al., 2018; Korbel, 2017; Muehlheusser et al., 2015; Weisel & Shalvi, 2015) based on the one proposed by Fischbacher and Föllmi-Heusi (2013), where participants could cheat in order to obtain a higher reward. However, some other experiments

have used cognitive tasks (e.g., Dunaiev & Khadjavi, 2021; Gino et al., 2013, Exp. 1; Pulfrey et al., 2018; Zanetti et al., 2023b). With or without financial incentives, in this kind of task, participants had to solve problems such as matrix tasks (e.g., Mazar et al., 2008), involving mathematical and logical skills. Unlike tasks based on luck, these tasks imply competence: Failure defines incompetence and a lack of intelligence, which is particularly threatening for the self, leading to a host of negative consequences (e.g., Butera & Darnon, 2017; Festinger, 1954). Although the aim of these experiments was not to focus on self- or team-efficacy, in these tasks there was often clearly not enough time to complete the proposed number of problems. This lack of time, especially in competitive situations, can be understood as a source of pressure and stress informing personal and group efficacy, leading people, in turn, to cheat together to attain their goal. For instance, in experiments where groups had to solve problems with little time at their disposal and where the inter-group competition was made salient (e.g., by anticipating a performance ranking), collective dishonesty was found even without monetary rewards (e.g., Zanetti et al., 2023b). The groups were therefore motivated to cheat in order to be the best (a performance-related motivation, as described in the previous section), and this may have been influenced by the perception of low team-efficacy informed by the characteristics of the task (time constraints and stress).

Another facet of the environment that can provide information about the personal self-efficacy or group team-efficacy is the attitudes and skills of teachers, especially in terms of *support,* as teacher skills have been found to impact individual self-efficacy (Murdock & Anderman, 2006). Indeed, the perception of instructor support has been shown to have an impact on collective cheating, operationalized as sharing behaviours: Cheaters (vs. non cheaters) perceived that instructor support was less available (Ferguson et al., 2022).

Another approach to studying collective cheating has been content analysis of websites proposing contract cheating, which showed that the language used (understood as a

form of *verbal persuasion*, which is a source of influence self-efficacy, according to Bandura, 1977) mainly played on students' vulnerability. Self-efficacy was a target theme, leading people to wonder about their skills and whether or not they could achieve their goals (Kelly & Stevenson, 2021).

**Team-Efficacy in Relation to Others**

Another approach to the issue of collective cheating is exploring team-efficacy in relation to people's beliefs about the cheating behaviour of others. The expectations on others' behaviour can have an impact on the sense of individual and group efficacy, leading people to cheat collectively so as not to be disadvantaged.

The perception of what others are doing—the descriptive norm (e.g., Cialdini et al., 1991)—is not only important as normative support for dishonest behaviour (see next section), but can also be understood as an influence on people' judgment concerning their efficacy, as an individual or as a group. Because self- and team-efficacy is a subjective perception, if others—those with whom one's performance is compared or the group competes—cheat, this will be considered in the choice to act honestly or not. Participants engaging in contract cheating (commercial and sharing) perceived a higher proportion of cheaters (the descriptive norm) compared to people who did not cheat (Ferguson et al., 2022). Moreover, a positive relation between the frequency of cheating behaviours (e.g., commercial contract cheating and sharing behaviours) and the norm was found in the survey research of Ferguson et al. (2022): Participants who said they had engaged in cheating perceived and reported a greater proportion of cheaters in the institution.

In the experiment of Kocher et al. (2018), communication between members was shown to have an impact on beliefs about the (dis)honesty of others. Measuring these individual beliefs before and after the group discussion (in a chat), they found that participants who interacted in a group changed more than those who were not given the opportunity to

interact (individual treatment). Group interaction reduces individuals' perceptions of other participants' honesty. Moreover, in a context of competition, groups have been shown to anticipate more dishonesty when the other party was a group (versus an individual), and cheated more (Dannenberg & Khachatryan, 2020). As the authors argued, “because one needs to outperform the competitor in a winner-takes-all competition, pessimistic expectations will increase the willingness to cheat” (Dannenberg & Khachatryan, 2020, p. 544).

**Summary**

Although team-efficacy has not been investigated as such in experimental and non-experimental research, the literature on collective cheating tends to highlight that the perception of efficacy—both at the individual and group level—plays an important role in the decision to cheat as a group. Whether this is related to characteristics of the context or of the task itself, such as its difficulty, or related to the expectation of dishonest behaviour on the part of others, self- and team-efficacy seems to be considered in the decision to cheat collectively or not. This finding appears to be parallel to those reviewed by Murdock and Anderman (2006), showing that it was the students' subjective perception of their self-efficacy and expectations of success that determined the choice to engage in individual cheating.

An interesting difference between collective and individual cheating is the fact that both self- and team-efficacy can co-exist in the former. Collective cheating may arise because a person feels that she or he is in difficulty, with a perception of low self-efficacy, and asks others to engage in collective, “pro-social” cheating to assist her or him. In this case, it is that person's sense of personal efficacy that motivates the attempt to cheat. In other cases, for example in an inter-group competition, it is the group as a whole that perceives low team-efficacy and reduced chances of success. In the latter case, it is team-efficacy that is central to engagement in collective cheating. This point seems to us particularly important for the conceptualisation of collective cheating. Indeed, unlike individual cheating, collective

cheating covers behaviours involving various intra-group dynamics and multiple organisational and decision-making structures.

## Question #3: What Are the Costs?

The last question members of groups may ask themselves before deciding whether or not to cheat is about the costs associated with collective cheating. The costs of cheating may be in terms of actual (or expected) negative consequences, such as being caught and having to pay the price, or psychological and moral costs. From a cost-benefit perspective, if the costs are perceived as too high, cheating will be less likely.

### The Anticipation of Costs and Justifications

In our model, costs related to dishonest behaviour are considered in an anticipatory manner, as facilitators or inhibitors of collective cheating. If this behaviour is anticipated to be very costly (in terms of negative consequences or in moral terms), this will reduce the likelihood of engagement in such behaviour, even for groups. It is important to clarify this point because in the literature on moral costs and moral failure, justifications are discussed as mechanisms activated after committing an immoral or dishonest action, in order to deal with the failure committed, in a compensatory manner (e.g., the moral disengagement theory of Bandura, 1990, introduced later).

Shalvi et al. (2015) discussed several sorts of self-serving justifications, defined "as the process of providing reasons for questionable behaviours and making them appear less unethical" (p. 125). In their paper, the authors made an important distinction between pre- and post-violation justifications, i.e., between the justification process which takes place before or after an immoral action. Even though those justifications both aim to reduce the—anticipated or experienced—moral threat or ethical dissonance (a form of cognitive dissonance, Festinger, 1957), the processes involved differ. In the first case, they argued, the justification process takes place before engaging in wrongdoing: People try to give reasons for the behaviour in

order to justify and excuse it, or to make it less immoral, which may increase the likelihood of cheating. In the second case, post-justifications allow people to compensate for a deviant act that has already been performed. Below, we discuss the anticipation of these costs as predictors of engagement in collective cheating.

**Anticipation of Negative Consequences**

***For the Group***

The anticipation of risks and possible negative consequences associated with cheating collectively may be a decisive factor in a group's engagement in dishonest behaviour. In their tax-compliance experiment, where the communication between members was analysed, Lohse and Simon (2021) found that one of the key elements discussed in the group was the risks of being caught. Similarly, Bonfim and Silva (2019) experimentally tested two main *control mechanisms* (audit and reading of a code of ethics). In a die-rolling task, group participants' payoff (commonality of payoff vs. not) was determined by the dice roll declared after having the opportunity to chat together. After a first session, they ran a second session where the group remained the same. Unlike in the first session, in this second session, control mechanisms were introduced and announced to the participants. These mechanisms were a) an audit process for a random participant in the group (which could reveal potential cheating and nullify the payoff of the group or of the participant according to the payoff condition), or b) reading a code of ethics and answering some question about it. Results showed that both mechanisms reduced cheating (for a discussion of the mechanism, see the next section): The expectation of a supervision process for a random participant in the group decreased cheating in teams (Bonfim & Silva, 2019). Interestingly, the authors observed a decrease in dishonesty (and increased honesty) in groups for which the gain was determined by the consensus of their responses (commonality of payoff). In this condition, if the audit revealed cheating, the whole group lost. In a qualitative study, when recalling a past occasion of academic collective

cheating, participants mentioned that risks were anticipated when engaging in such behaviour: They talked about *strategies they implemented to reduce the risks of being caught,* or they declared that risks were minimal (Zanetti & Butera, 2022). Thus, and interestingly, the perception of low risk associated with collective cheating appears to be linked to its altruistic and pro-social nature, as well as its collective character where everyone is involved, making it difficult to report the cheating and therefore to get caught.

Finally, a survey study revealed that the *perception of the seriousness* and the frequency of the cheating (for commercial contract cheating and sharing behaviours) differed between cheaters and non-cheaters: Participants who engaged in such behaviours judged them as less serious than participants who did not, and the more frequent these behaviours were, the less serious they were considered to be (Ferguson et al., 2022). It should be noted that the latter two results are derived from explanations *a posteriori*, although it is reasonable to think that these considerations may exist in an anticipatory way, thus determining the commitment to the behaviour.

***On Third Parties***

The anticipation of the negative consequences that dishonest behaviour can have for third parties outside the group seems to be another factor influencing the propensity to cheat in groups. Interestingly, the meta-analysis of Leib et al. (2021), found a decrease in dishonesty when collective cheating harmed others. This result is in line with that of Castillo et al. (2020), who showed that groups were not more dishonest that individuals when this behaviour harmed a third party. This is particularly the case if the third party is known. Indeed, in a field experiment where the authors explored the behaviour (individual vs. group) of returning excessive change given in a restaurant, they found that regular customers returned the extra money more frequently than people who came just once (Azar et al., 2013). The *extent of the damage* that a third party may suffer also plays a role in collective cheating

decisions. Indeed, Azar et al. (2013) found that, regardless of the individual or group setting, participants returned the extra money more often when the amount of the return was high (vs. low). This finding suggests that if the damage to others is perceived as too great, the group (but also the individual) will be less likely to cheat. Another explanation is in line with self-concept maintenance theory (Mazar et al., 2008): Cheating "just a little" seems to allow people to benefit from cheating without having to revise their self as an honest person.

**Management of Moral Costs**

When behaving dishonestly, people also assess "internal" costs—psychological and moral—of their actions and wrongdoings. As for the risks and negative consequences discussed above, if these costs are minimal or may be minimized, cheating is more likely to occur. A growing body of evidence has shown that psychological and moral costs are more relevant than strict economic costs and benefits (e.g., Gino et al., 2009; Mazar et al., 2008).

***Norms and Culture***

It is now well-known that the *descriptive or social norm*, i.e., the behaviour of peers, has a strong impact on attitudes and behaviours (e.g., Cialdini et al., 1991; Keizer et al., 2008). The effect of peers, the perception of what peers are doing, is also significant for both individual and collective cheating (e.g., Awdry & Ives, 2021; Genereux & McLeod, 1995; Gino et al., 2009; Jones & Kavanagh, 1996; Leib et al., 2021; McCabe & Trevino, 1997; O'Rourke et al., 2010; Soraperra et al., 2017; Zhao et al., 2022). Indeed, the exposure of others' dishonesty, the descriptive norm, tends to push people to behave more dishonestly, in individual and collective terms. For example, in a sequential matrix task which two participants had to solve independently and where participants' payoffs were not interdependent, Feess et al. (2023) showed that the dishonesty of the first participant impacted that of the second participant when the latter knew the answer of the first. In another experimental condition, the first participant could send a message to the second. When this

message asked for honesty in the report, the second player showed less cheating. In both cases, the second participants aligned their behaviour with that of the first player.

The influence of peers also plays a role in collective cheating in terms of normative support for anticipatory justifications of the wrongdoing: Participants "explained" past collective cheating by appealing to the normality and commonality of behaviour—because "everyone does/did it" (Zanetti & Butera, 2022). Even if this justification is given as an after-the-fact explanation of the behaviour, it shows that what others do can create a normative climate, a known routine that can also be used in an anticipatory way. Likewise, as seen in the previous section, Ferguson et al.'s survey (2022), found a positive relation between perceived student norms (perceived proportion of students engaged in cheating) and the frequency of cheating.

In a series of studies on corruption, Köbis et al. (2015) found that the perceived descriptive norm—about the predominance of corruption—was positively related to corrupt behaviours (Studies 1 and 2) and also has an experimental effect on them (Study 3). For example, in Study 3, the authors manipulated the descriptive norm with a statement participants read (anti-corruption vs. pro-corruption vs. control). Results showed that participants in the pro-corruption norm condition, where the corruption decision was described as common, demonstrated more engagement in corrupt behaviour than participants in the anti-corruption norm condition (Köbis et al., 2015). Results of a field experiment showed similar results: The perception of bribery as a norm and engagement in bribery—in a game—were reduced when social pro-honesty norm nudges were displayed on posters in the town where participants lived (Köbis et al., 2022).

A study that tested the validity of a new scale assessing the culture of collective cheating in academic contexts showed that the extent of such a culture, operationalized as a descriptive norm, positively predicted the acceptance of collective cheating (Zanetti & Butera,

2023). Acceptance of collective cheating is a proxy of cheating behaviour if we consider the positive link that some authors found between attitudes about cheating and actual behaviour (Jordan, 2001; Whitley, 1998).

Moreover, as suggested in the first section, Kocher et al. (2018) found that group processes such as interaction and communication play a role in collective cheating because they allowed participants to discuss a new norm of honesty (in favour of dishonesty) and its validity. In the tax-compliance experiment of Lohse and Simon (2021), they found the same pattern: The concept of being honest was found to be one of the main arguments in the discussion between group members. Indeed, participants shared arguments in support of or against cheating in half of their communications.

Regarding the effect of a culture of (dis-)honesty on the development of cheating, based on the case study of Volkswagen's emission scandal, Castille and Fultz (2018) discussed the role that the permissive organizational culture played in the emergence of collective cheating. As they argued, "If a culture is ethically permissive, then unethical solutions may already exist, helping the collaborative cheating effort to emerge" (p. 99). Even the mere perception of a culture of dishonesty has an impact: In a cross-national experiment, respondents were more likely to offer and accept bribes if the partner, in either the receiving or offering role, was of a nationality with a reputation for high levels of corruption (Dorrough et al., 2023).

On the other hand, several studies revealed the importance of a culture of honesty or the salience of moral standards for collective as well as individual cheating (e.g., Gino et al., 2009, Exp. 2; Mazar et al., 2008, Exp. 1 and 2). Self-concept maintenance theory (Mazar et al., 2008) suggests that there is a zone where a balance could be found between the potential benefit of cheating and the need to reduce the threat to one's sense of self as a moral person. Moral standards in force in a given context are central in determining the extent of this zone.

Indeed, if moral standards are salient, the self-concept maintenance zone would be reduced, making it more difficult to act dishonestly without moral consequences. In these cases, cheating—individually or collectively—would decrease. Dunaiev and Khadjavi (2021) showed the effectiveness of signing a statement of honesty at the beginning (vs. no signature) of a self-report in decreasing individual cheating; moreover, they found that this nudge—making honesty salient—also worked for teams. In their experiment, dyads made a joint decision regarding the declared performance on a matrix task, which determined the team payoff. Results showed that dyads cheated less when they had to sign an honesty statement at the beginning of the report sheet where they reported their performance compared to dyads in the no-signature condition. Similarly, the presence of moral reminders (reading a code of ethics) at the beginning of a game session decreased cheating in collective settings (Bonfim & Silva, 2019, see previous chapter for more details on the study).

Gross and De Dreu (2020, Study 2) examined the contagiousness of honesty. They explored the group composition in terms of participants' propensity to follow the rules or not (rule-followers vs. rule-violators) and its impact on collective cheating with an incentivized die-rolling game where the dyad payoff was determined by the sequential decision of the first and then the second participant. They found less cheating when participants were both categorized as high rule-followers but also when they were mixed (one participant was a high rule-follower, the other a low rule-follower), compared to dyads where both participants had a low tendency to follow rules. Their results not only showed that "individuals with a stronger propensity to follow rules resist the temptation to engage in collaborative cheating" (p. 402), leading to a decrease of collective cheating, but also that these individuals in groups could influence the behaviour of the other group members even if this latter showed a strong tendency to break the rules. However, this pattern did not always appear. Indeed, in another experimental study employing a die-rolling paradigm with several sessions over time, Gross

et al. (2018) found that, when asked to stay with or to leave the current partner, participants who tended to act dishonestly looked for a dishonest partner, whereas participants who exhibited honest behaviour wanted to stay with the dishonest partner in order to take advantage of their behaviour by adopting what the authors classified as ethical free riding behaviour.

### *Anticipatory Justifications*

When a balance cannot be found between behaving dishonestly and maintaining a good self-image, justifications are needed to somehow explain and justify the behaviour, with the aim of reducing the experience of cognitive dissonance (Festinger, 1957). In research on collective cheating, some moral disengagement mechanisms have appeared to be central, such as for example the moral justifications or the diffusion of responsibility (Bandura, 1990, 1999, 2002).

**Moral justifications**, i.e., justifications whereby the behaviour is reinterpreted as having a moral motivation or purpose, are a mechanism which was found to be very common in cheating involving more people—as "partner in crime" or beneficiaries (e.g., Gino et al., 2013). In research on individual dishonesty, lying or cheating were perceived as more justifiable if it had potential benefits for others (e.g. Erat & Gneezy, 2012; Gino et al., 2013; Levine & Schweitzer, 2014; Wiltermuth, 2011). In collective cheating, group members are often positively interdependent, and the benefits concern all group members, in most cases, or some members. This interdependence could be used as support for moral justifications or self-serving altruism (see Shalvi et al., 2015 for a discussion on self-serving altruism), thereby facilitating collective cheating. Indeed, Gino et al. (2013) showed that dishonesty, i.e., misreporting performance on a matrix tasks, increased according as the number of people in the group increased: Participants in groups cheated more than participants in dyads or alone, and participants in dyads were more dishonest than participants working alone.

The fact that cheating was found to be more prevalent when members equally benefited from cheating (e.g., Bonfim, 2018; Conrads et al., 2013; Weisel & Shalvi, 2015; Wouda et al., 2017) is another clear example that the altruistic and pro-social character intrinsic to collective cheating could be used in an anticipatory way to reinterpret the act—and its (moral) purpose. Other research has found that in a competitive setting, *benevolence values* (values aimed at the protection of relatives or group members) were positively associated with moral disengagement toward collective cheating (Pulfrey et al., 2018, Study 1). This result was especially found when the collective cheating involved exploiting the resources of another group (Study 2).

**Diffusion of responsibility**, i.e., the perception that, in groups, responsibility for the wrongdoing could be shared among members, is another moral disengagement mechanism found in collective cheating events (e.g., Conrads et al., 2013; Feldman & Rosen, 1978; Mazar & Aggarwal, 2011; Rowan et al., 2022; Zanetti et al., 2023a). For instance, in the criminology literature, Rowan et al. (2022) highlighted that offenders recognized lower individual responsibility when the crime was committed with other people. In online experimental studies asking participants to recall an event of collective vs. individual cheating, Zanetti et al. (2023a) found that people reported less responsibility and less guilt after the recalling of an instance of collective cheating compared to an instance of individual cheating, showing how responsibility could be diffused in group settings. Again, this mechanism could occur in an anticipatory manner. A decrease in personal responsibility could be experienced by virtue of the group setting of the decision-making.

**Summary**

Group members are concerned about negative consequences and moral costs when reflecting on the decision to cheat together. Indeed, it is the anticipation of the risks and costs associated with wrongdoing that influence the cheating decision. In a general manner, when

these costs are too high—for the group, for its members, or for a third party—group members tended to engage less in collective cheating. We have seen that when collective cheating is facilitated by the absence of supervision, or when it is perceived as less serious, groups engaged more in dishonesty. Moreover, findings highlighted the importance of social norms and culture: When collective cheating is commonplace, the propensity to engage in it increases; when the surrounding culture promotes honesty, group dishonesty is reduced.

The findings on the concerns about potential risks and negative consequences are similar to those reviewed by Murdock and Anderman for individual cheating. However, the literature on collective cheating highlighted some new elements which seem to exist specifically in the collective form of this behaviour. The first one is concern about others outside the group: When collective cheating harmed others, groups were less likely to cheat. This point was not particularly noted in the individual framework probably because the latter focused on academic cheating, which rarely has negative consequences or the presence of victims beyond oneself. As stated at the beginning, for the present article we reviewed work from various fields, which led us to consider behaviours that can have serious consequences, including monetary consequences, for others.

Another feature of collective cheating is that anticipatory justifications are built on the presence of others. Whether it is because everyone is doing it, because of the prosocial and altruistic nature of the action, or because responsibility can be shared with others, the presence of accomplices, i.e., “partners in crime,” appeared to be a determining factor in the propensity for collective cheating. This could also explain the “dishonesty shift” when in groups (Kocher et al., 2018).

## General Conclusions and Future Research

Our goal was to structure the literature on collective cheating, which has grown exponentially in recent years. We developed an integrated framework where we organised

contributions in this field, based on the structure of the model Murdock and Anderman (2006) proposed for individual academic cheating. Adopting a contextual-motivational approach, we organised the literature through three main questions, about motivations and goals, the perception of self- and team-efficacy and, finally, the assessment of costs and benefits related to collective dishonesty. Unlike Murdock and Anderman, we have taken into account a wide literature coming from different fields and examining a variety of contexts in which dishonesty occurs, not only the academic one. Indeed, if individual cheating has been widely studied in school contexts, few contributions have done so for collective cheating. This feature of our work allows us to propose a model that is not domain specific but highlights general trends in the area of collective dishonesty.

**Contribution of the Model**

As for motivations and goals, we found that collective cheating was increased in situations where a) group members adopted extrinsic motivations, focused on performance or financial gains, or pursued (pro-)social motives. The benefit of collective cheating to obtain a better performance or grade, or earn more money, appears in our literature review as a central reason for engagement in this behaviour. We therefore gave these motives a central position in the first line of the model. Moreover, another important set of motivations emerged, those linked to social benefits. Cheating to be part of a group and protecting the collective image of the group was an important feature of much of the reviewed literature. We also found that collective cheating increased when b) either self-efficacy, or team-efficacy, or both, were low. When the group and its members question their ability to succeed in achieving their objectives, collective cheating could be seen as a solution. Finally, collective cheating increased when c) this behaviour was associated with low costs, understood as negative consequences (on the group or a third party) or moral costs. Collective cheating was more

frequent if no one was affected or hurt by the wrongdoing, if the risks to the group were minimal, or if the moral and psychological costs were more easily managed.

The use of a model for collective cheating that was inspired by a model developed for individual cheating allowed the present review of the literature to compare the experiences of individual and collective cheating: Thus, we were able to highlight the similarities between these two forms of dishonesty, but also point out the peculiarities of collective cheating.

### *Similarities and Differences between Collective and Individual Cheating*

Throughout this paper, we have highlighted the similarities and differences between the phenomena of individual and collective cheating. Concerning the commonalities between individual and collective cheating related to the guiding motivational questions, we found important similarities between the two forms of dishonesty, such as the extrinsic orientation of motivations and goals, the low sense of self-efficacy, and the reflection on costs. These results revealed that the group, considered in its entitative and cohesive dimension, appeared to be subject to the same influences as the single individual in terms of its propensity to cheat. In addition, a more individual dimension is also present in collective cheating. Goals and benefits, for instance, are interdependent, but so are individuals, as well as the reflection on efficacy that takes place for both the individuals and the group. In collective cheating we are faced with the articulation of these individual and collective forces.

Despite these similarities between individual and collective dishonesty, some factors appear to be typical of collective cheating experiences only. Thereupon, these factors are intrinsically linked to the collective nature of this type of dishonesty. The group and its members have been shown to have an important impact on the development of motivations, leading to social and prosocial goals, and on the use of anticipatory justifications that are based on the presence of others. Moreover, the literature on collective dishonesty is consistent

regarding the importance of peers, and the norm created by their behaviour, on the emergence of collective cheating.

Finally, collective settings lead group members to consider two types of efficacies in their abilities to succeed in their goals, related to the self and to the team. The consideration of one rather than another depends on the type of cheating (not all collective cheating involves the same group dynamics) and the two perceptions can co-exist and feed each other.

By looking at the origins and main sources of influence on the response to the three motivational questions, there would appear to be major differences between these two forms of dishonesty in terms of individual and contextual factors. There are several interrelated considerations worth mentioning in this regard. Firstly, comparing the two models, we can see similarities that are not apparent at first glance. Indeed, some differences lie solely in the way certain factors are named (more oriented towards generic contexts and less academic); Some contextual and individual sources of influence—although named differently—are underpinned by the same or similar mechanisms. To give an example related to the first motivational question, in both models, there are influences that refer to similar contexts with a particular goal structure or rich in competition, triggering the same mechanisms.

Despite these similarities in terms of the underlying mechanisms, it is certainly true to note some main differences between the two models and examples of sources of influence. An important consideration at this regard is that the Murdock and Anderman's model only considered the educational field, whereas the model we proposed for collective cheating is rooted in a broader literature, bringing together different disciplines. This varied literature has led us to integrate into our model sources of influence that do not exist—or exist to a lesser extent—in the school and academic environment, such as consideration of harm to others, a factor that emerged as a concern in collective cheating decisions. Furthermore, given that the two types of cheating are often not studied in parallel, certain sources of influence have

simply not been explored for both phenomena. Finally, explaining the differences between the individual and the collective framework, a key point is intrinsically linked to the differences in the nature of the two forms of cheating. We already emphasised this many times: The main feature on which the differences between the two forms of dishonesty are built is the presence of others and the collective nature of collective dishonesty. In collective cheating, the presence of the group matters and is a main source of influence on several levels. It is therefore not surprising to find different origins when these are based on the existence of the group.

**Research Agenda**

Although the contributions organized in this model show specific and consistent tendencies, the review also allowed us to point out some important gaps. In particular, more work is needed to provide an empirical test of the predictors of collective cheating, notably the factors—individual and contextual—that influencing the responses of group members to the three motivational questions we considered. This is particularly true when considering the elements that are predominantly typical of collective cheating.

Although social motivations appeared to be central in collective cheating, it is not yet clear how they arise. Future research would benefit from focusing on the role of group processes in the development of social motivations. For instance, future studies could tackle how relatedness and identification play a role in engagement in group cheating, and how they might be satisfied by collective cheating.

Moreover, although some justification mechanisms seem to be typical of collective contexts (e.g., diffusion of responsibility), justifications that focus on the group dimension have received little attention. It would be interesting to explore whether—and how—the cooperative, pro-social and solidarity dimensions of collective cheating serve as a moral buffer or even moral justification. In addition, only few studies have examined the impact of

anticipating the consequences on others in collective cheating decisions. It would be interesting to study more in-depth this issue, especially under the perspective of the willful ignorance phenomenon (see Vu et al., in press, for a recent meta-analysis), i.e. ignoring information concerning the consequences of the own action.

Self- and team-efficacy are probably the predictors of the propensity of collective cheating that have received the least empirical attention. Indeed, only few studies have investigated efficacy, and in most cases, proxies were used. Because perception of efficacy is both related to oneself and the group, it would be particularly relevant to study both forms of efficacy, and the articulation of the two. In situations of collective cheating, one could, for example, explore how personal efficacy of the group members impacts the group, how self-efficacy of the members interact, and how team-efficacy is influenced by the context.

Even if the present model is concerned with collective cheating, we cannot ignore the role that some individual factors could have in the decision of whether or not to engage in cheating with others. However, in the literature on collective dishonesty, only few studies have explored the impact that dispositional factors, such as the tendency to follow rules or personal values, have on the individual propensity to engage in a collective cheating (e.g., Gross et al., 2018, 2020; Pulfrey et al., 2018). In addition to the fact that these factors do not necessarily allow to discriminate between individual and collective cheating, it is not currently possible to propose a theoretical model that can accounts for contextual and dispositional factors. In future research, it would be interesting to study in greater depth some individual and dispositional factors, such as the dark triad of personality (e.g., Paulhus & Williams, 2002) or moral foundations (e.g., Graham et al., 2012; Haidt & Joseph, 2004) which could influence the individual's propensity to take advantage of contextual elements or 'opportunities' to engage in collective cheating, corruption or other form of group dishonesty.

Finally, the present framework integrated literature from various fields. While this is, in our view, a strength for understanding collective dishonesty in a broad sense, it would also be interesting to explore the nuances that depend on specific fields and areas of cheating. For example, what is the difference between the representation of one's ingroup in a case of corruption or bribery compared to an instance of academic cheating which involves the whole class? In these two cases, to what extent do the justifications differ, between situations and between members of the group?

This review makes it possible to highlight central elements which, however, deserve to be further explored at the empirical level and according to the definition and operationalization of the type of collective cheating considered.

# CHAPTER 2:

# The Chronology of Collective Cheating: A Qualitative Study of Collective Dishonesty in Academic Contexts


## Abstract

Collective cheating can have serious consequences in professional and educational settings. Existing data show that collective cheating is common and that individuals cheat more when they are in groups, highlighting the existence of some collective organisation in the endeavour. However, little is known about the emergence of this behaviour and the group processing involved. Drawing on qualitative data from 20 semi-structured interviews and a thematic analysis, the present study explored collective cheating in academic contexts. Seven themes emerged that retrace the chronology of collective cheating from its beginning to its impact on the group: reasons, birth and organisation of collective cheating, risk management, concealment strategies, justifications and social impact. Participants emphasised the extrinsic benefits, the interdependence of members and the importance of existing social norms, as well as the positive valence of this kind of dishonesty. In participants' recalls, cheating together means cooperating, showing solidarity, helping and supporting each other.


*Keywords:* collective cheating, academic integrity, academic misconduct, cooperation, ingroup processes

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# The Chronology of Collective Cheating: A Qualitative Study of Collective Dishonesty in Academic Contexts

In recent years, countless fraud scandals in many contexts, such as business and education have made the headlines. From the most mediatized to the most obscure, these events often show group members, e.g., people from the same company or school, acting in an organised and conscious manner to behave dishonestly. Frauds by major corporations such as Volkswagen (e.g., Hotten, 2015) and copying off during exams at Harvard University (e.g., Pérez-Peña & Bidgood, 2012) are typical examples of collective cheating.

The existing experimental studies in the social, educational, and organisational sciences have shown that cheating and strategic behaviour by groups are common, highlighting the existence of collective organisation in cheating (e.g., Gross et al., 2018). In spite of the evidence documenting the existence and effects of collective cheating, however, this growing literature has not yet revealed where cheating comes from, how it sets in and how it plays out, probably because it is difficult to observe collective cheating in the making.

This study wishes to contribute to a literature in full expansion by a fine-grained qualitative analysis of the processes that make collective cheating possible. Through a rich analysis of retrospective self-reported collective cheating episodes, we aimed to uncover the untold story of why and how people come to cheat together. In so doing, we limited our study to collective cheating in the educational context, arguably the most researched context as far as individual cheating is concerned (e.g., Murdock & Anderman, 2006).

## From Individual to Collective Cheating

Researchers' interests in cheating, in particular in academic settings, started since the '80s (e.g., Covey et al., 1989; Houston, 1983) and developed through the '90s (e.g., Anderman et al., 1998; Jones & Kavanagh, 1996; Kerkvliet, 1994; Roig & DeTommaso, 1995; Schab, 1991). Most studies focused on individual cheating, a form of dishonesty or breaches of

academic integrity that can be defined as “individually bending or breaking rules to gain an unfair advantage for self or others” (van Prooijen & van Lange, 2016, p. 3; see Murdock & Anderman, 2006 for a review).

The extensive literature on individual cheating has emphasized the role of some *predictors* in the propensity to cheating. Several studies have highlighted the importance of motivation in academic cheating (e.g. Putarek & Pavlin-Bernardić, 2020). From the perspective of self-determination theory (Ryan & Deci, 2000a) and achievement goal theory (e.g. Elliot & McGregor, 2001), research has shown that individual cheating increased (a) when students were extrinsically motivated, i.e. motivated by external rewards and consequences, and (b) when their goals were performance-oriented (e.g., Anderman et al., 1998; Jordan, 2001; Murdock et al., 2001, 2004; Park, 2020; Pulfrey et al., 2019), especially when students' performance was evaluated (Daumiller & Janke, 2019). Moreover, a competitive context—concerned with relative performance—plays a role on motivation, through the promotion of social comparison (Festinger, 1954). Bäker and Mechtel (2019) found more cheating when participants performed in the presence of a peer compared to working alone. Human values (Schwartz et al., 2012) are another set of important predictors (e.g., Pulfrey & Butera, 2013, 2016; Pulfrey et al., 2019), as are perceived likelihood of being caught, severity of punishment, and difficulty—or accessibility—of cheating (e.g., Covey et al., 1989; Graham et al., 1994; Hollinger & Lanza-Kaduce, 1996; Houston, 1983; Shmeleva & Semenova, 2019; Zhao et al., 2021).

As for *mechanisms* underlying individual cheating, research showed that psychological and moral costs are more relevant than economic costs and benefits in explaining the phenomenon (e.g., Gino et al., 2009; Mazar et al., 2008). From this point of view, self-concept maintenance theory (Mazar et al., 2008) and moral disengagement theory

(Bandura, 1999) both explain how individuals who cheat activate various psychological mechanisms that protect their self-concept and moral integrity.

Finally, the literature on individual cheating has highlighted the importance of the *environment* in which individual dishonesty takes place, in particular the influence of peer behaviour and attitudes (e.g., Jordan, 2001; McCabe et al., 2001; O'Rourke et al., 2010; Shmeleva & Semenova, 2019; Zhao et al., 2022). Gino et al. (2009, Experiment 1) have shown that exposure to other people's immorality increased individual cheating if the other person was an ingroup (vs. outgroup) member. Likewise, Jones and Kavanagh (1996) documented the influence of managers' and peers' behaviour—ethical vs. unethical—on workers' behavioural intentions. These findings highlighted the crucial influence that descriptive norms, i.e. how other individuals behave, have on individual behaviour (e.g., Cialdini et al., 1991; Keizer et al., 2008), even in cheating decisions.

Despite regular examples of collective fraud in various fields of everyday life, academic collective cheating is a relatively recent research area compared to individual cheating. For this reason, we have included in the present literature review works in all areas of collective cheating, not only academic. Collective cheating is defined as "cheating that occurs when individuals of various backgrounds interact to create, implement, and sustain solutions to problems that violate ethical obligations or norms" (Castille & Fultz, 2018, p. 95). Collective cheating is a form of dishonesty that sees people "cheating together with ingroup peers" (Pulfrey et al., 2018, p. 764), which clearly defines a collective behaviour where intra-group dynamics play a facilitating crucial role. Indeed, the existing literature (see Leib et al., 2021 for a meta-analytic review) has highlighted higher levels of dishonesty among those in groups: Individuals randomly assigned to groups cheat more than individuals who are alone (Chytilová & Korbel, 2014; Gross et al., 2018; Kocher et al., 2018; Soraperra et al., 2017). Similarly, groups were found to employ more "sophisticated" deception, advantaging the

ingroup (Cohen et al., 2009; Sutter, 2009; see also; Bornstein & Yaniv, 1998). Finally, Mazar and Aggarwal (2011, Study 2a) demonstrated that participants primed with a collectivistic mind-set (vs. individualist) were more likely to engage in bribery, i.e., offer an unofficial payment for a personal interest. In conclusion, the literature has shown that collective cheating is frequent, and people are more strategic and dishonest when acting in groups than alone.

***Predictors of Collective Cheating***

At the level of ingroup bonds, some studies revealed a positive relation between benevolence values, defined as "the preservation and enhancement of the welfare of people with whom one is in frequent personal contact" (Schwartz et al., 2012, p. 664), and collective cheating (Pulfrey et al., 2018). Manipulating participants' mindset with a focus on perceived self-other similarity (vs. dissimilarity) in collective and individual tasks, Irlenbusch et al. (2020, Study 1) found that, when the cheating was done at the expense of others, the sense of similarity (vs. dissimilarity) increased cheating in dyads (but see Chytilová & Korbel, 2014). Interestingly, studies employing self-report surveys found that students mainly asked other students, friends, or family for help in assignment outsourcing or, in general, academic cheating (Awdry, 2021; Bretag et al., 2019; Đogaš et al., 2014). These findings appear to support the importance of the relationship in collective cheating.

The expected collective utility of cheating was also explored as predictor. Collective cheating was found to be more frequent when cheating was beneficial for oneself but also for the other member (Conrads et al., 2013), especially when both members benefit in equal terms (Weisel & Shalvi, 2015). However, Kocher et al. (2018) found that group members communicated and coordinated in a dishonest manner even if the payoff was not commonly determined, showing the central role of group interaction.

To summarize, the recent literature on collective cheating highlighted the potential role of ingroup-level factors such as values, sense of familiarity with other members and the collective utility of cheating. However, this literature does not illuminate the beginnings of collective cheating: how it emerges and how group members align and organise themselves.

***Mechanisms of Collective Cheating***

Diffusion of responsibility, which allows people to feel less accountable for a dishonest action when shared with group members (Bandura, 1999), was presented as one of the most important mechanism promoted by team incentive schemes (Conrads et al., 2013). Likewise, Mazar and Aggarwal (2011) showed that the positive relation between collectivist priming and the propensity for bribery was fully mediated by perceived responsibility (for own actions), which was lower in participants primed with a collectivist mind-set.

As for norms, Soraperra et al. (2017) found that mere social norm exposure (i.e., exposure to rule violations) appeared to be sufficient to increase cheating behaviour. Indeed, the belief and knowledge of other student's cheating was found to be a predictor of students' cheating under the form of outsourcing work to relatives and friends (Awdry & Ives, 2021). Kocher et al. (2018) also found that exchanging arguments and justifications for dishonesty could lead groups members to learn about a new norm and its validity, and to adjust their beliefs about the behaviour. From another perspective, evidence showed that when people can choose to stay with the same dyad member or to switch, dishonest people tended to prefer staying with or looking for a dishonest partner (Gross et al., 2018).

Thus, this literature showed the importance of ingroup interactions and norms exchange, as well as diffusion of responsibility as a moral disengagement mechanism. However, although their importance has been discussed, little is known about how these mechanisms actually lead to collective cheating in the course of a group's interactions.

### *The Environments of Collective Dishonesty*

Some theoretical models, often related to corporate dishonesty and corruption, underlined the impact of organisational and contextual features on the emergence of unethical practices (Ashforth & Anand, 2003; Baucus, 1994; Castille & Fultz, 2018; Palazzo et al., 2012). They emphasized the importance of company culture and leadership, and underlined the role of contextual features in collective cheating. Strong leadership, ideologies and institutions, as well as an ethically permissive culture, routine of decisions, competitiveness, fear and pressure at different levels were highlighted as having an impact on the occurrence of collective cheating.

These models offer a relevant view of the environments in which collective cheating is likely to occur. However, these theoretical perspectives focused on the contextual influences that lead to the emergence of cheating, but investigated to a lesser extent how such contexts actually result in the group processes typically involved in collective cheating.

## The Present Study

The reviewed literature has identified a number of predictors, mechanisms and environments that account for the emergence of collective cheating. However, it is still unclear how they emerge and shape a group's dynamics during collective cheating. Moreover, to our knowledge, no study has so far attempted to reconstruct an entire collective cheating episode. The aim of the present study is to fill these gaps by retracing the whole story: How does collective cheating begin? How does it take place and how is it organised? What processes are involved?

The choice to focus on collective cheating in educational contexts was motivated by the extent of the literature and theoretical bases in the field of individual academic cheating (e.g., Murdock & Anderman, 2006). Moreover, most people have been students and most of the students have cheated at least once (McCabe & Trevino, 1997; Waltzer & Dahl, 2021).

This is the main reason for choosing to interview ordinary people: Anyone can potentially have a memory of academic collective cheating.

To collect data, we choose to employ a retrospective qualitative methodology, i.e. asking people to recall an autobiographical episode of collective cheating. We were interested in participants' experiences of collective cheating and how they construe them. Indeed, as Scott and Alwin (1998, p. 104) underlined, retrospective memories are "looking back on or thinking about things past or reviewing/contemplating the past rather than simply recalling or remembering things (…) and, as such, are assumed to be affected not only by past experiences but also by present conditions. (…) Such interpretations of the past draw on things that have happened more recently and explain past happenings in the context of the present". Previous studies have shown the effectiveness of autobiographical memories as an induction technique, particularly for emotional induction (e.g. Gerrards-Hesse et al., 1994; Maner et al., 2007).

The originality of the present study is to constitute a rich analysis of the academic collective cheating episode through a narrative approach. Drawing on interviews and a thematic analysis, our purpose was to explore how the predictors, group processes and mechanisms of collective cheating unfold during group processing.

## Method

### *Participants*

Twenty people were recruited to participate in our study. All contacted participants accepted to participate in the study and all of them had a collective cheating episode to report (none of them declared that they never cheated). The study was presented as a short, confidential interview on an episode of collective cheating in the school and academic contexts. The data collection ended after these 20 interviews because the code saturation criterion was reached, i.e. when "no additional issues are identified and the codebook begins

to stabilize" (Hennink et al., 2016, p. 593), merging inductive thematic saturation and data saturation (for a discussion see Saunders et al., 2018). Participants ranged from 22 to 45 years old ($M$ = 32.74, $SD$ = 7.40), with 55% of women. All participants were living in the French-speaking part of Switzerland at the time of the interview, which was conducted in French. It is important to note that, although the interviews were conducted in Switzerland, and the majority of the participants recalled an episode that took place in Switzerland, the others talked about events in France, Italy and South America, as a function of their life trajectory. In terms of education, all participants had a university or a high school degree. Interviews ranged in duration from 5'40" to 28'24" ($M$ = 13’07’’, $SD$ = 7’35’’). The extracts of interviews have been translated and are reproduced here in English.

***Materials***

Each respondent participated in a face-to-face semi-structured interview. The structure of the interview guide (Supplementary Materials A) was the following: one main question, “Remember one time during your school and/or academic career when you cheated with one or more of your classmates”, complemented, if necessary, by several follow-up questions. We chose this structure because we assumed that a collective cheating event has a “history”, but we wanted to leave enough leeway for the participants to confirm or disconfirm this assumption.

***Procedure***

Participants signed a consent form where they were informed about their voluntary participation, the confidentiality of data and the audio recording of the interview. The Swiss Federal Act on Research involving Human Beings does not require approval from an institutional research ethics board when a study is conducted with adults and does not involve biological measures. Our Ethics Committee provided a written statement certifying this context that is available upon request.

The interview started with the first main question and ended when the participants had recounted the collective cheating episode and answered, if necessary, the follow-up questions. Participants were thanked and fully debriefed. Interviews were audio recorded and transcribed verbatim to ensure accuracy (Poland, 1995).

***Data Analysis***

Given the dataset involved in this study—personal experiences—we chose to analyse data through a thematic analysis, a method popularized and formalized by Braun and Clarke (2013). A thematic analysis consists in "systematically identifying, organising, and offering insight into patterns of meaning (themes) across a data set." (Braun & Clarke, 2012, p. 57). Because we needed to focus on the content of the participants speech—the what—and not on the language—the how—we considered this method as particularly appropriate. Thematic analysis was carried out using the NVivo 12.04 package.

The procedure (Supplementary Materials B for the detailed procedure) used in this study was mainly based on the 6-phase approach to thematic analysis discussed by Braun and Clarke (2013), i.e., 1. Familiarizing with data; 2. Generating initial codes; 3. Searching for themes; 4. Reviewing themes; 5. Defining and naming themes; and 6. Producing the report. After being familiarized with the whole dataset and having allowed the first ideas to emerge, we attributed to each relevant unit of meaning—i.e. a segment of the data relevant for the research question—a code, which reflected the idea contained in the portion of the considered data. For the generation of initial codes, we decided to complement Braun and Clarke's methodology with some guidelines drawn from the qualitative consensual approach research (Hill, 2012; Masdonati et al., 2017), in order to reinforce the analysis' reliability: The first code list was the result of a consensual work between two members of the team, rather than an individual work. Moreover, before starting the systematic coding process of the entire dataset, a third team member verified the clarity and the relevance of each code. Once the

coding process was completed for all interviews, codes were collated and combined around a common organising concept that is in fact captured by a theme or a sub-theme, i.e., a specific facet of the pattern reflected in the theme.

## Results

Ten themes emerged from this thematic analysis. The analysis showed that seven of these themes could be organised chronologically, giving rise to what we have called *the chronology of collective cheating* (cf. Figure 1; see Supplementary Materials C for the complete tree of themes and subthemes). Three reflexive themes, that emerged from the ability to reflect on the participant's own experience,—on relations, emotions and cognition—, completed the overview of collective cheating but are beyond the scope of the present article (interested readers may contact the authors).

**Figure 1**

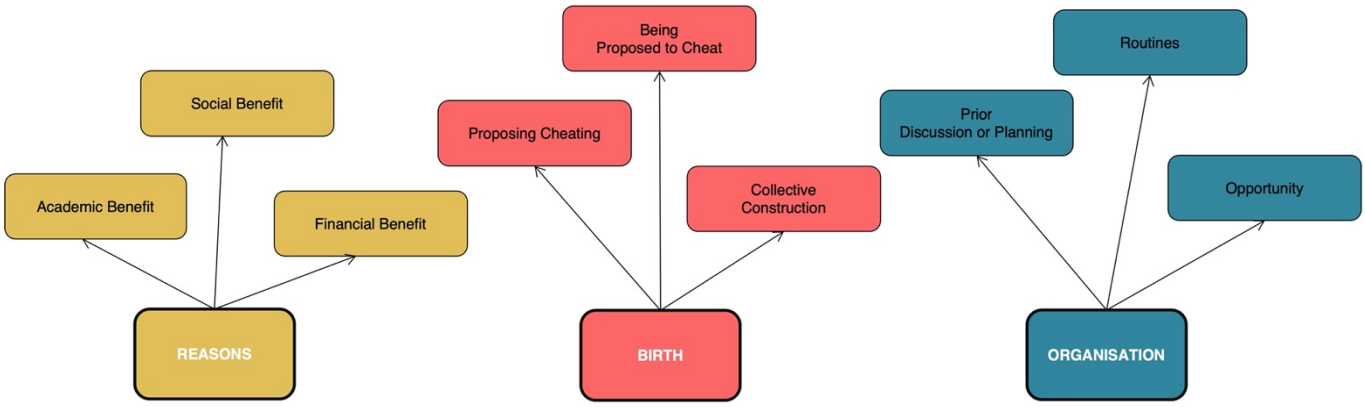
*The Chronology of Collective Cheating*


### The Chronology of Collective Cheating

The seven narrative themes were 1) Reasons for collective cheating; 2) Birth of collective cheating; 3) Organisation of collective cheating; 4) Risk management; 5) Concealment strategies; 6) Justifications and 7) Social impact of collective cheating. Themes and sub-themes are presented hereafter and then interpreted in the Discussion section.

**Figure 2**

*The Reasons, Birth and Organisation of Collective Cheating*




### *Reasons for Collective Cheating*

Involvement in collective cheating was described as driven by three types of benefit: *academic, financial or social* (cf. Figure 2).

**Academic and Financial Benefit.**

*(...) we thought "yeah, how could we cheat and then get, yeah, get a better grade"* (P10, W, 24)[3].

Unsurprisingly, many participants mentioned a benefit that was strictly related to school and academic performance, where a member or many members of the group wanted to perform well or wanted to avoid a poor or a bad performance. The need for reassurance or being in trouble are other reasons mentioned.

Participants also mentioned a purely financial benefit as a reason for participating in collective cheating.

*(...) they said "Hey, I'll pay you if you give me... your answers". And I said "Oh, why not"* (P6, M, 35).

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[3] For quotations, the participant's reference numbers—P(number)—, gender—W(oman) or M(an)—, and age—(years old)—are given.

**Social Benefit.** Cheating was also done in response to a call for help, and presented as a form of altruism, to satisfy a need for belonging or social recognition, or because of some pressure to conform to the group.

> *It was him who asked me then, well, I was stressed but I was happy to help (...) it was also a time when I needed to integrate so I wasn't going to refuse him* (P9, W, 24).

### *Birth of Collective Cheating*

How does collective cheating begin? Three main sub-themes emerged from participants' recalls: *proposing cheating*, *being proposed cheating* and *collective construction* (cf. Figure 2).

**Proposing to Cheat.** How did people propose collective cheating?

> *But he was the one who, in fact, answered for us (...) I probably said to Claudio*[4] *"you're good at maths (...) you can just quickly write the answer"* (P18, M, 35).

Cheating was often proposed in the form of an explicit request. A less bold way of proposing collective cheating involved situations of fun among friends or emerged after an initial phase of investigation.

> *I think it was in the moment, we were laughing and then uh, I don't know if it was in the moment or the day before we decided to do it* (P20, W, 39).

Related to the acceptance of one's proposal, participants also reported a kind of uncertainty.

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[4] Alias

The choice of the "partner in crime" also emerged as an important topic. For instance, friendship was described as a facilitator of demand or the choice was described as more strategic.

> *I think mostly... they are friends, so the group you have outside, [outside] the exam, outside the classroom* (P3, M, 33).

Cheating was also described as sometimes happening with the same people and, other times, there was a kind of network implied.

> *(...) there are small groups, sub-groups, and sometimes... yes, there are people a little closer to you and then, depending on the size of the group, a person who knows another person well, a person who knows another person well so* (P3, M, 33).

**Being Proposed to Cheat.** Again, in some situations, a very explicit request was made and, in others, people detected an indirect request for help.

> *But explicitly (...) it was explicitly asked if I can help, because they couldn't find the solution.* (P4, M, 35).

**Collective Construction.** Finally, participants perceived and described collective cheating—the intent and/or the initiation—as a collective construction.

> *I think we decided together, I don't remember, I don't remember anyone suggesting it... uh, it was more of a group dynamic, let's say we're going to do this thing together* (P3, M, 33).

### *Organisation of Collective Cheating*

Several scenarios emerged from the interviews, highlighting a *prior discussion or planning*, *routines* and an organisation based on *opportunity* (cf. Figure 2).

**Prior Discussion or Planning.**

*(...) we were talking about it just before we arrived, like "do we exchange the sheets if there are two series?" and then "ah bah, I turn and then I pass you the sheet, then you pass me yours", because we had to be... we had a few seconds actually to be able to do the exchange (laughs)* (P19, W, 35).

Cheating was described as somehow premeditated—discussed and planned—by the group.

**Routines.** A collective cheating routine sometimes emerged that no longer needed to be discussed among group members.

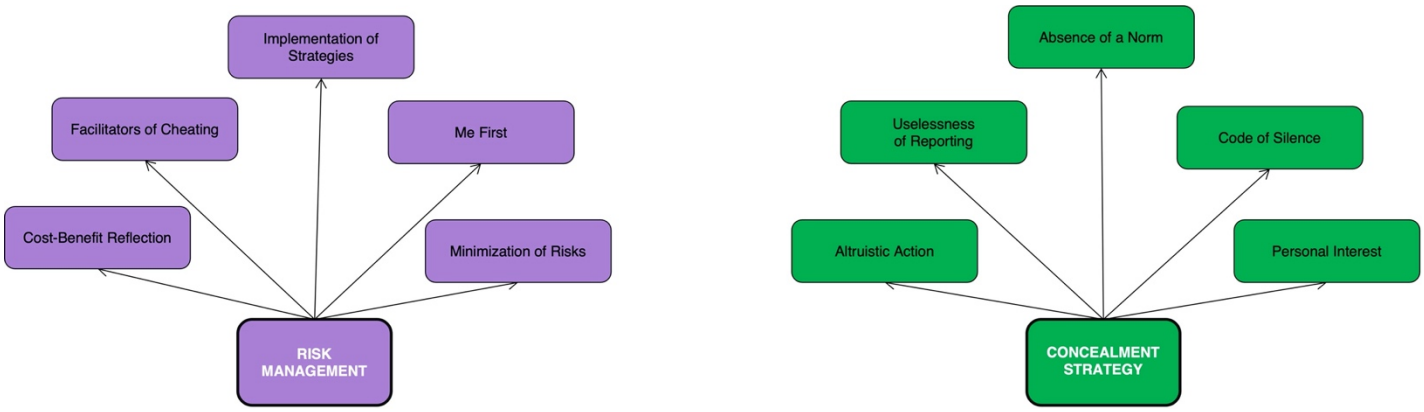
*(...) afterwards, that's, there's a sort of pattern, because for example in Latin (...), we always did the same thing, after the first two times maybe not, but afterwards it's true that... they asked me to help, but then we used the same method* (P4, M, 35).

**Opportunity.** Collective cheating could also be the result of a combination of favourable circumstances linked to the situation itself.

*(...) in this context, we are obliged to work on a computer, so we have access to other tools that potentially shouldn't be... provided to us* (P14, M, 45).

**Figure 3**

*Risk Management and Concealment Strategy*




### *Risk Management*

Risk-taking emerged as a function of various considerations related to *facilitators of cheating*, the *implementation of strategies*, a *cost-benefit reflection*, the *protection of one's own performance* ("*Me first*") or the *minimization of risks* (cf. Figure 3).

**Facilitators of Cheating.** In order to reduce the likelihood of being caught and, consequently, paying the cost of a dishonest behaviour, several participants reflected on facilitators decreasing risks.

> *And then, uh, normally, well, the one on the right had the A series and the one on the left had the B series. And then what we did is, while he was distributing, we always sat in front enough, because he always started with the front tables and ended with the back tables, and while he was distributing, well, we would quickly turn around with the back table, and then we would switch series* (P19, W, 35).

Participants referred to the context's predictability, the spatial proximity between group members—the most mentioned facilitator—, the access or the use of technology and the involvement of an authority in the collective cheating. The fact that cheating could be done quickly without too much effort was also a factor reducing the perception of risk.

**Implementation of Strategies.** In other situations, strategies clearly devoted to reducing or eliminating risks of being caught were implemented.

> *Then I was like, "(...) I'll put the diary a little bit more in the middle with my, my pencil box, then you put your pencil box at the same time as mine on top of my diary and then like that he won't see anything"* (P11, W, 35).

**Cost-benefit Reflection.** Participants also compared the benefits of cheating with the costs involved at different levels.

> *And it wasn't really the risk, but... but it was rather the time. (...) for maths, it was really, 2 pages of, of process. So that, that, that, that took quite a long time* (P6, M, 35).

**"Me First".** When cheating is done to benefit another person, the protection of one's own performance emerged as a necessary condition for engaging in cheating.

> *I gave him an answer to one, for the second one I gave him a tentative answer and then for the third I didn't answer at all. After a while I found it a pain (laughs). On the one hand because... the, the test in question was complicated, it was long, uh, I also had to be able to answer myself* (P1, M, 23).

**Minimization of Risks.** Finally, risks could simply be minimized in how they were perceived.

> *We hadn't even thought too much about the seriousness of the thing, I think, or the possible negative consequences of the thing, so it was more like a game I think, so we really didn't think much about the possible stakes* (P5, M, 31).

***Concealment Strategy***

Reporting and whistleblowing was considered unlikely or rare. The reasons for this pertained to various arguments: *personal interest*, presence of a *code of silence, absence of a (reporting) norm, altruistic action* or *uselessness of reporting* (cf. Figure 3).

**Personal Interest.**

> *Well, let's say that if I, if I reported him, I also reported myself, so, uh, I wasn't going to report anyway, I wasn't going to report anyone because I was in fact putting myself in an awkward position* (P11, W, 35).

Reporting was deemed unlikely because every party involved had a personal interest in concealing cheating.

**Code of Silence.** A particular climate where a code of silence was established also emerged.

> *It's not usual, because it would be a kind of whistleblowing to do it and so it would be very badly seen and all that. (...) it would be a bad, uh, image, a bad reputation of the person who reports, that's it* (P4, M, 35).

**Absence of a (Reporting) Norm.**

> *There, there was never anyone who reported. In any case, that's the kind of thing I've never seen* (P14, M, 45).

Reporting was described as a non-existing norm: This behaviour had never been seen and had never existed.

**Altruistic Action.** The altruistic nature of collective cheating also explained unlikelihood of reporting.

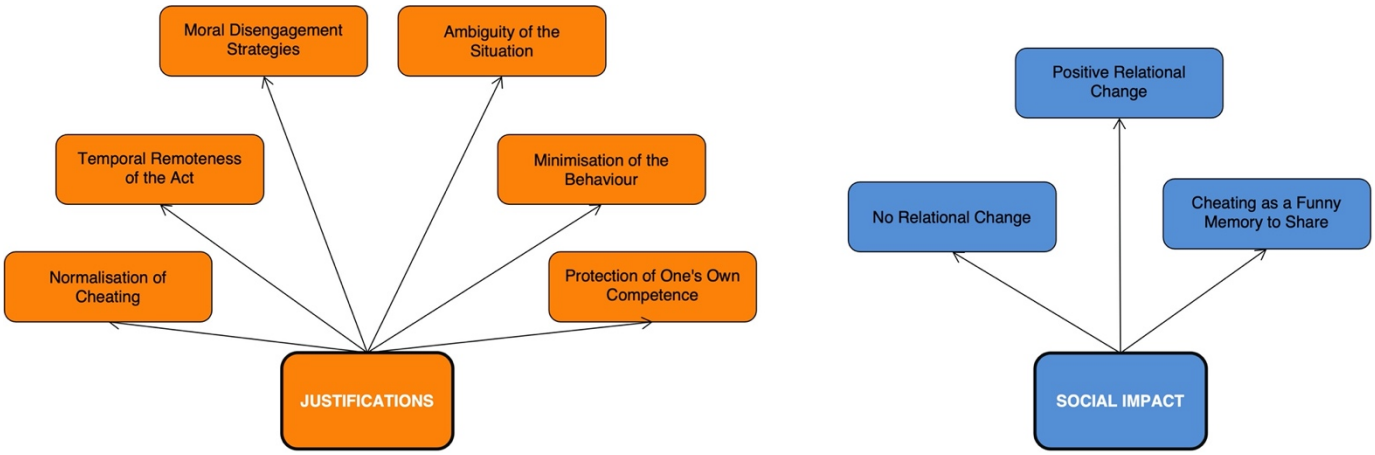
> *Well, I had no interest in reporting his behaviour at that time. Well, I don't know. It was rather, well, it was rather, it was support* (P12, W, 36).

**Uselessness.** Finally, reporting cheating was unlikely because this action was considered as useless, blaming the context for keeping the—dishonest—system in place.

> *If someone had gone to report it to the teacher, the teacher would have said "what's the point of reporting it?"* (P17, M, 40).

**Figure 4**

*Justifications and Social Impact of Collective Cheating*




### *Justifications of Collective Cheating*

Several justifications related to morality emerged, like the *normalisation of cheating*, the *minimisation of the behaviour*, the *ambiguity of the situation*, *remote temporality of the act,* and finally a set of justifications that pattern Bandura's *moral disengagement* theory (Bandura, 1999). *Protection of one's own competence* is a set of justifications with a different aim, namely protecting, in a clear manner, the representation of the self as a competent person (cf. Figure 4).

**Normalisation of Cheating.** Participants often described collective cheating as a very common behaviour, a kind of existing norm: "everybody did it".

> *Most of the people I knew, yes, there were quite a few who were cheating too, so uh, it was easy to say, "well ok, just take your hand off so I can see".* (P10, W, 24).

**Minimisation of Behaviour.** "We did it but just a little" is another frequent justification allowing to minimise the intensity or frequency of the dishonest behaviour.

> *The test we had, there were some questions that were the same, not all of them, but some questions, yes, it was the same, but it only happened twice, eh, at school anyway* (P2, W, 22).

**Ambiguity of the Situation.** Participants also mentioned rules that were seen as unclear or ambiguous to justify collective cheating. The context was sometimes considered to leave room for cheating.

> *The test had not quite started. The teacher had already given us the sheets and then it was an exam where you had to put dates (...) I had started straight away, then I had a friend next to me who, uh, actually wanted to ask me a question just before the test started and then he saw, I put something in, a date he didn't know and then he was able to write* (P1, M, 23).

**Temporal Remoteness of the Act.** The fact that the cheating took place a long time ago also served as justification.

> *Now I won't do it because I don't have that, that mentality or, or that sort of, lightness if you can say "no, we studied then we'll do"* (P20, W, 39).

**Moral Disengagement Strategies.** The following set of justifications refer to Bandura's moral disengagement theory (Bandura, 1999) and have already been discussed in this framework for individual unethical behaviours. Bandura's theory argues that people can

selectivity engage or disengage their moral standards and the associated self-regulatory mechanisms via several psychosocial mechanisms.

The first three mechanisms—moral justifications, euphemistic labelling, and advantageous comparison—were found in our analysis and they aimed to adjust the immoral behaviour into a "good" behaviour. People justified their behaviour as being motivated by a moral or worthy goal, they decreased the immorality of the action according to how the action is called or because of an advantageous selection of the comparison terms.

The second set of mechanisms of moral disengagement we found enabled people to obscure or minimize personal responsibility for the questionable behaviour and felt less accountable. Their own personal agency was decreased by attributing the responsibility to others or by sharing the responsibility with group members.

Finally, blaming the victims or the context for the own action, participants described their action as a defensive or reactive behaviour, and they could also feel self-righteous in the process. For example:

***Moral Justifications.***

> *Because I'm someone who likes to help people (laughs). Then, who likes, ... if I can help I do it then, uh, well, there you go. Yes, I think that's it* (P11, W, 35).

***Advantageous Comparison.***

> *(...) apart from getting caught in the act, direct, but it's not something, it's not like I gave him my dissertation and he's going to copy it* (P8, M, 22).

***Euphemistic Labelling.***

> *We have to work on things... we don't necessarily have time, so we helped each other a lot (...) I even think about the exam, it was, it was natural to be able to give each other a hand* (P14, M, 45).

***Displacement of Responsibility.***

*Yes, I've never questioned that at any time, well... He's the boss. He was, he was, yes, he was in charge there and then, ok* (P12, W, 36).

***Diffusion of Responsibility.***

*For me it was that from the moment we did it together, uh, everyone had the same responsibilities in relation to it... and then, well, they were people, ... we were a group of close friends since, well, since the college, some a little before* (P15, W, 39).

***Blaming the Victims or the Context.***

*We really had a teacher who was harsh, who didn't explain, and then, it's not, it's not even that we didn't bother, it's that you could... study, but during the tests, he was, he was, it was really, (...) you could do it, but you could check the answers a bit with this system* (P20, W, 39).

The only two mechanisms of moral disengagement theory (Bandura, 1999) that did not emerge from interviews were related to dehumanisation of victims and minimizing, denying, ignoring, or misconstruing the harmful effects of their action. The absence of these two mechanisms can be attributable to the fact that, in academic collective cheating, consequences are not really seen as harmful or detrimental to others who could be perceived as real victims.

**Protection of One's Competence.** Emphasizing one's own competence and intelligence appeared as a frequent justification for the involvement in cheating in favour of others.

*Well, we were, I wasn't cheating after all, I did the calculations, I mastered maths well enough to... it was more of a game, an exercise to do these maths exams, because I had a much higher level than what they were asking us.*

> *(...) And the others knew that I was ok... they knew that I was quite altruistic, they knew me (laughs) at that level, that I would agree to pass on the results to them"* (P17, M, 40).

### *Social Impact of Collective Cheating*

Finally, collective cheating appears to have surprising consequences for the relationship between group members. Three sub-themes emerged from the analysis: *no relational change*, *positive relational change* and *cheating as a funny memory to share* (cf. Figure 4).

**No Relational Change.** Participants often remarked that collective cheating did not lead to change in group dynamics.

> *We, we stayed friends. There were no, no problems, no worries. It was the same relationship at first and it was the same relationship in the end* (P6, M, 35).

**Positive Relational Change.** Some participants mentioned collective cheating as a positive factor in the relationships between group members.

> *In a positive way, it [the relationship] has changed in a positive way (...) it created even more of a sense of group (...) collaboration and group cohesion* (P3, M, 33).

**Cheating as a Funny Memory to Share.** Other participants said to remember the event as something fun, as a memory to share with friends.

> *It's a story that we remember like a unifying thing, that we laugh about* (P15, W, 39)

## Discussion

The present results provide for the first time a detailed and chronological overview of the collective cheating episode in academic contexts. The participants' narratives allowed us

to retrace the unfolding of collective cheating, from the reasons and the first steps that lead to cheating, through its organization and the reflections about risk, to the justifications used and even the consequences for the group itself. We requested the participants to narrate their retrospective memories, which we argued is an important feature of the present research, since it affords to access the construal that people who have collectively cheated communicate. Despite the complexity and the variety of this frequent group behaviour, several common elements emerged across themes. The first three elements presented in this discussion—extrinsic motivation, descriptive norms, and protection of the self—were anticipated in the literature review. Two other common elements emerged from our analyses that were unexpected—Slippery slope or Steep cliff, and The cooperative dimension of collective cheating—; they have been theoretically integrated in this discussion.

**The Role of Extrinsic Motivation**

When talking about reasons for collective cheating, which informs the question of predictors of cheating, participants particularly emphasized the role of extrinsic motivation (Ryan & Deci, 2000a), i.e. performing a behaviour because of external pressure, and performance goals, i.e. goals related to the desire to demonstrate one's own competence (e.g., Elliot & McGregor, 2001). Extrinsic motives (with external regulation, to employ Ryan & Deci's, 2000a taxonomy) such as academic or financial benefits, both for the whole group or for one of its members, were typically associated to competitive settings, steeped in social comparison (Festinger, 1954) and contextual pressures to perform and succeed. Interestingly, research showed that such settings do drive people to cheat in an individual or collective manner (e.g., Bäker & Mechtel, 2019; Cohen et al., 2009; Palazzo et al., 2012; Pulfrey & Butera, 2013; Pulfrey et al., 2018). Another instance of extrinsic motivation (in this case with introjected regulation, Ryan & Deci, 2000a) can be found in the social benefits mentioned by the participants. People tend to develop membership to social groups in order to satisfy their

need for relatedness, one of the three psychological human needs (Ryan & Deci, 2000b). Group membership provides a shared positive social identity, which contributes to their self-concept and self-esteem (Tajfel, 1979). Personal need for identification can lead to loyalty to the ingroup, which, in turn, has been shown to play a central role in the engagement in corrupt behaviours (Anand et al., 2004). Similarly, motivation to behave to gain social approval increased the adoption of context-specific competitive performance-approach goals and individual cheating (Pulfrey & Butera, 2013). Our results suggest that collective cheating may arise from a similar need.

**The Importance of Descriptive Norms**

As far as mechanisms of collective cheating are concerned, descriptive norms—the norms inferred from other people's behaviour—yield substantial effects on one's attitudes and behaviours (e.g., Cialdini et al., 1991; Keizer et al., 2008). A typical and common behaviour mentioned in the present scenarios was that nobody reported cheating, regardless of what appears to be moral or immoral, approved or disapproved. Whether as a justification, i.e., everyone did it, or because of the absence of a culture of reporting, our results clearly showed the power of social norms of silence.

In line with this account, the simple exposure to a dishonest norm in collaborative settings was shown to increase (individual) cheating (Soraperra et al., 2017). Moreover, Kocher et al. (2018) have shown the role of communication and norm compliance in collective cheating. Exchanging arguments for dishonesty probably leads participants to learn a new shared norm of dishonesty, which provides normative support for justifications. In terms of environment of collective cheating, such normative support, especially if afforded over long periods of time, may constitute a favourable environment, as revealed by the fact that participants indicated that sometimes cheating did not need any specific organisation as it was rooted in well-practiced routines.

**Protection of the Self**

Our results underlined how important it was for participants to maintain a good self-image. Protecting the self-concept is a topic that emerged in several themes related to mechanisms pertaining to the justification of a moral failure, the maintenance of a good social image and a view of the self as competent.

The rich theme on justifications showed the importance moral failure management, as a number of justifications were mentioned. In addition to the moral disengagement mechanisms (Bandura, 1999) detailed above, another theory deserves to be mentioned in the analysis of these results: self-concept maintenance theory (Mazar et al., 2008), which argued and showed that "ordinary" people cheat but not to a large degree, in order to find a balance between the potential benefit of cheating and the need to reduce the threat to one's sense of self as a moral person. Indeed, some justifications, i.e. minimising the behaviour and mentioning the ambiguity of the situation, could be understood in the light of this theory. As Mazar et al., (2008) explain, cheating “just a little” does not require people to "update" or change their self-image. Moreover, in contexts in which the norms or rules are unclear, ambiguity can be used as a justification in an opportunistic manner, giving people “more room for interpretation of their actions, making the moral implications of dishonesty less accessible” (Mazar et al., 2008, p. 638).

Interestingly, not only did our participants try to maintain a good image in moral terms, but they expressed concerns about social image and competence. Reputation, which strongly influences self-esteem and social identity (Bromley, 1993), can be at stake when proposing collective cheating. Interestingly, sometimes, the need for being free to retract if necessary and manage one’s self-image resulted in not being explicit in the request of cheating and test the waters. Moreover, participants often mentioned their own competence and intelligence as a justification for the involvement in cheating in favour of others. This

surprising justification may suggest a compensation strategy and brings us to a question: Is competence more important than morality? Interestingly, as already mentioned, participants often described collective cheating where they were involved as "helpers", emphasizing the importance of maintaining a view of the self as competent. And indeed, the importance of competence, and the negative consequences of competence threat, have been discussed in social comparison theory (e.g., Butera & Darnon, 2017; Festinger, 1954) and, as a basic human need, in self-determination theory (Ryan & Deci, 2000a, 2000b) to point that individuals resort to numerous mechanisms in order to maintain a positive image of themselves in terms of competence (e.g., Tesser, 1988).

**Slippery Slope or Steep Cliff?**

Participants discussed various scenarios describing how collective cheating started and became organised. They often described a demand—explicit or not—or a collective construction, but also planned events or routines of collective cheatings.

In some scenarios, the request and acceptance of collective cheating can be understood as the first step of the slippery-slope of corruption (e.g., Ashforth & Anand, 2003; Castille & Fultz, 2018; Darley, 2005; Palazzo et al., 2012): A first unethical act starts the chain of other unethical acts. However, according to some other participants, this first step can sometimes be precipitated by contextual circumstances and opportunities. Studying the road to corruption, Köbis et al. (2017) found that bribery was more severe when the opportunity to engage in it was given to individuals in a direct and abrupt manner that could be understood as a favourable circumstance (the steep-cliff metaphor). Beyond these two metaphors, several participants reported being simply engaged in routine behaviours, which parallel those described in the literature on corruption, where unethical behaviour is described as a repetitive institutionalized organisational behaviour, with well-practiced decisions and procedures that participate to normalize corruption (e.g., Castille & Fultz, 2018; Palazzo et al., 2012).

**The Cooperative Dimension of Collective Cheating**

In participants' memories, collective cheating often emerged as a positive feat appealing to friendship, solidarity and cohesion. Indeed, when choosing the "partner in crime", friendship or the habit of working together, are often mentioned as key factors. A parallel can be drawn with findings showing that benevolence values and familiarity between members (Pulfrey et al., 2018), as well as perceived similarity (Irlenbusch et al., 2020, Study 1) are related to the acceptance of collective cheating and cheating behaviour. Moreover, accepting collective cheating seemed to be subject to solidarity and loyalty, but also social pressure (cf. the theme “reasons of collective cheating”). Cooperation and loyalty have often been shown to be higher when identification to the group were higher (e.g., Hogg & Reid, 2006), and Hertel and Kerr (2001) found an increase in ingroup favouritism and identification when loyalty was primed.

Cooperation and positive goal interdependence have also been shown to increase the perception of bonding among group members (Johnson & Johnson, 2005). This feeling of unity and cohesion could therefore be linked to a common and collective setting, management and justification of cheating. It is important to note that participants, whether they proposed to cheat, or they accepted cheating, often described the behaviour of others. Indeed, participants mainly reported collective cheating by describing their own role as "helpers", academically speaking. Interestingly, Levine and Schweitzer (2014) found that the perception of an individual’s morality seems to depend on the intentions of the cheater. Cheaters can be perceived to be moral by others, especially if their behaviour has an altruistic or a prosocial character, and an intention of advantaging and helping others; this is widely mentioned by participants to explain the unlikelihood of reporting. Indeed, reporting and whistleblowing are not a common behaviour in the collected stories of collective cheating. The participants mentioned the two major motivations in favour of concealment that were highlighted by the

literature on the code—or law—of silence, known in the context of Italian Mafia under the name "Omertà" (Varese, 2017). The first is the trust between group members (e.g., Chin & Wells, 1998; Skolnick, 2002), aiming to maintain collective well-being (Rothwell & Baldwin, 2007). The second motivation is related to fear of negative consequences or retaliation from the group, such as avoidance, loss of group support or stigmatization (Hersh, 2002; Thau et al., 2015).

Also of interest is the impact of cheating on the group members. When looking at the consequences, participants often reported an increase in cohesion and feelings of bonding between group members after the experience of collective cheating. This finding may however not be surprising if analysed from the perspective of cooperation. Indeed, as already mentioned, cooperation and positive social interdependence have shown positive consequences even from an interpersonal point of view (Johnson & Johnson, 1989, 2005, 2009). Interestingly, none of the participants reported a negative impact of the cheating episode on the group. Cheating, in its collective form, is viewed as something rather positive that can have either no impact on group members or a positive impact, strengthening their cohesion and friendship.

## Limitations

In the present study, we focused on collective cheating in academic contexts, but we referred to a wide range of literatures rooted in other fields. Future research should study collective cheating in other environments—e.g., at work, in sports, in politics—to be able to draw parallels with regard to the emergence of cheating, its course and the group processes involved. It should also be noted that, even if we restricted our focus to academic collective cheating, our sample size of 20 interviews may be a limitation for generalization. Moreover, it is possible that the mechanisms and group processes are different depending on the number of

members in the group, especially if it is a dyad or a group of more than two people. It would then be important to studying these two settings separately and in detail.

## Conclusions

Collective cheating is a pervasive and increasingly documented phenomenon in school and academic environments. Through the memories of participants who have experienced collective cheating, we traced the episode of collective cheating from its emergence to its impact on the group. The main contribution of this research is that, for the first time, a qualitative study offers an account of the chronology of collective cheating from an insider's point of view. In addition to providing a detailed overview of the event, this study highlights the positive perception of collective dishonesty. Collective cheating is indeed described as group cooperation, resulting in a positive view of this collective behaviour despite the awareness of dishonesty.

# CHAPTER 3:

# The Liberating Effect of the Group: Past Experience of Cheating Together Makes Us Feel Less Responsible and Less Guilty


## Abstract

People cheating together do not appear to experience guilt, and diffusion of responsibility has been mentioned as a potential explanatory mechanism. This study tests the hypothesis that past collective cheating elicits lower levels of guilt than individual cheating through reduced perceived responsibility. In Experiments 1 ($N$ = 843) and 2 ($N$ = 770), participants reported feeling less responsible and less guilty after recalling a collective cheating episode compared to recalling individual cheating. Moreover, responsibility was found to be a mediator of interest in the relationship between the type of cheating (collective vs. individual) and guilt. In Experiment 3 ($N$ = 788), preregistered, we manipulated the mediator, i.e., responsibility in collective cheating: Participants reported more guilt when asked to describe an event in which they had convinced others to cheat together compared to an event in which the decision to cheat was a group decision, thereby supporting the diffusion of responsibility hypothesis.


*Keywords:* collective cheating, diffusion of responsibility, guilt, emotions, moral disengagement

*Note.* The present paper is under review as: Zanetti, C., Ric, F., & Butera, F. (2023). The liberating effect of the group: Past experience of cheating together makes us feel less responsible and less guilty. *Manuscript under review*.

## The Liberating Effect of the Group: Past Experience of Cheating Together Makes Us Feel Less Responsible and Less Guilty

Recurrent scandals in business, sport or the academia reveal a collective organisation in cheating. Whereas individual cheating defines the dishonesty of a single individual for its benefit or for others (van Prooijen & van Lange, 2016), collective cheating is referred to as dishonesty in collective settings seeing two or more people collaborating and "cheating together with ingroup peers" (Pulfrey et al., 2018, p. 764). Collective cheating is a frequent group behaviour, and the literature has shown that individuals cheat more when they are in groups (e.g., Gross et al., 2018). At the same time, it appears that collective cheating is perceived as a positive group experience by members and does not seem to elicit a great deal of guilt (Zanetti & Butera, 2022).

Several mechanisms have been proposed to account for the differences between dishonesty in groups and alone; diffusion of responsibility has been suggested as a major underlying mechanism for collective cheating (e.g., Conrads et al., 2013). However, to our knowledge, only few studies have discussed the link between diffusion of responsibility and collective cheating, and none has empirically tested the relevance of this hypothesis.

We aimed to contribute to the growing literature on collective cheating (see Leib et al., 2021 for a meta-analytic review), by empirically testing the hypothesis of the diffusion of responsibility as a potential mechanism that differentiates collective cheating from individual cheating. Moreover, we wished to study the consequences of diffusion of responsibility on the experience of guilt. Indeed, if it is true that being in a group, people perceive that responsibility for the wrong action is shared among group members, then people cheating in groups should feel less individually responsible. Since responsibility is central to guilt (e.g., Basil et al., 2006; Tangney & Dearing, 2002)—people feeling guilty are aware of their personal responsibility in the wrongdoing—reduced perceived responsibility following

collective cheating should predict lower levels of guilt. We thus test the hypothesis that the past experience of collective cheating elicits lower levels of guilt than the one of individual cheating through reduced perceived responsibility.

**The Phenomenon of Collective Cheating**

Cheating in groups is a common phenomenon, and experimental evidence has highlighted that individuals tend to cheat more frequently when they are randomly assigned in a group compared to individuals who are and act alone (e.g., Cohen et al., 2009; Gross et al., 2018; Kocher et al., 2018; Korbel, 2017; Soraperra et al., 2017; Weisel & Shalvi, 2015). In the study of what has been called a "dishonesty shift in groups" (Kocher et al., 2018; i.e., increased dishonesty when in groups), several hypotheses have been proposed to explain why dishonesty seems to be so facilitated by being in a group. Social norms were investigated as potential mechanisms involved in the increase of dishonesty in collective settings. For instance, the mere exposure to social norms, i.e., the exposure to another person's dishonesty, was identified as a sufficient condition to increase cheating (Soraperra et al., 2017). In favour of the contagiousness of dishonesty, Gross et al. (2018) found that the individual likelihood of cheating was higher when a partner previously showed a dishonest behaviour. In the same vein, Kocher et al. (2018) highlighted the importance of communication—the exchange of arguments and justifications for dishonesty—in the learning about a new norm and the adjustment of people’s beliefs about the dishonest behaviour.

A common hypothesis explaining dishonesty—or even delinquency—in groups is the diffusion of responsibility (e.g., Conrads et al., 2013; Feldman & Rosen, 1978; Mazar & Aggarwal, 2011; Rowan et al., 2022), a cognitive mechanism allowing people to perceive decreased own accountability for a dishonest action when sharing the responsibility among group members (e.g., Bandura, 1990, 1999). Indeed, in collective decisions, diffusion of

responsibility has been shown to have a protective role from the negative consequences of the behaviour, decreasing negative emotions, like regret or stress (El Zein et al., 2019).

**Diffusion of Responsibility**

In the study of dishonesty, the self-regulation of a moral failure is a well-studied issue. Performing an action that violates moral standards involves costs that people tend to manage to maintain a positive image of who they are. The literature has therefore been interested in how people deal with these moral costs and work to maintain a positive self-image, as a moral and "good" person.

One of the best-known theories in this field is the moral disengagement theory (e.g., Bandura, 1990, 1999). This theory contends that people can succeed in coping with moral failure through several cognitive mechanisms by which they selectively engage or disengage their moral standards. Among other strategies, diffusion of responsibility is presented as a mechanism typical of questionable behaviours performed in groups. Such mechanism enables people to obscure or minimize personal responsibility—*a posteriori*, but we may conceive that the mechanisms could operate in a pre-emptive manner, as is the case with pre-violation justifications (e.g., Shalvi et al., 2015)—for some questionable behaviours, playing on the shared responsibility with the group. The responsibility for one's wrongdoing is perceived in some sort as divided and shared between group members and, thus, people feel less accountable for the dishonest action (notwithstanding actual individual responsibility for the act). It is important to note that such reduction in accountability only pertains to the actor's point of view. Indeed, beyond the perspective of the actor, collective responsibility for a wrongdoing (i.e., all group members were involved) has been found to positively predict observers' support for collective punishment (Pereira et al., 2015): As long as the group is involved as a whole, all the group members are considered for collective punishment. However, in this research, we did not focus on collective responsibility; given that people do

not seem to feel guilty after collective cheating experiences (e.g., Zanetti & Butera, 2022), our interest was to test the effect of being involved in collective cheating on individual responsibility and personal feelings of guilt.

It is worth noting that people feel personally responsible for the outcomes of group work as a function of their accountability, that is the extent to which their personal contribution to the group is visible or can be assessed. For example, in cooperative and positively interdependent settings, the feeling of personal responsibility concerning effort and active participation in achievement of the common goal are higher than in settings where members are more independent (Johnson & Johnson, 2009). However, these feelings arise only if group accountability (i.e., group outputs) and individual accountability (i.e., individual contribution) are both assessed (Johnson & Johnson, 2005, 2009). If individual accountability is not visible or assessed, group contexts could lead to a decrease in the sense of personal responsibility, diffusion of responsibility, and the impression of being "lost in the crowd" and obtaining "neither precise credit nor appropriate blame for their performance" (Latané et al., 1979, p. 830).

Although diffusion of responsibility is a strategy commonly mentioned to account for collective dishonesty, this hypothesis has not received much empirical attention by research conducted in group settings. Looking at a broader literature, Rowan et al. (2022) found a decrease in personal responsibility when an offense was done with others and a negative relationship between the number of co-offenders and the perception of their own responsibility in the offense. The same two patterns were found when participants were asked to assess the perpetrator's responsibility for a negative/criminal behaviour (Feldman & Rosen, 1978).

Focusing on our area of interest, to our knowledge, only few studies have attempted to investigate the diffusion of responsibility as mechanism involved in collective cheating

(Conrads et al., 2013; Mazar & Aggarwal, 2011, Study 2; Soraperra et al., 2017). In a study that tested the impact on cheating of current compensation systems using a dice-roll paradigm, Conrads et al. (2013) explored the participants' motivations to cheat. In the control condition, the payoff of one participant was determined by an own roll and a random draw, which helped determine the payoff of a second participant. The reported behaviour of participants with this compensation system was compared to the one of participants in a team incentive condition, i.e. where the payoff was shared between two participants. Cheating seemed to be more frequent in the latter condition, where the payoff where collectively determined. The authors argued that the increase in dishonesty under team incentives could be explained by the fact that in that condition participants' agency is less visible. However, even if this finding seems to support the diffusion of responsibility hypothesis, at this stage, it is not a direct test of it.

In a similar way, Mazar and Aggarwal (2011, Study 2) showed that individuals primed with a collectivistic, interdependent mind-set felt less responsible for their own deeds and, consequently, showed a greater propensity for behaving dishonestly. These authors revealed that the positive relation between collectivistic priming and the propensity for bribery was mediated by perceived responsibility (for one's own actions), which was lower in participants primed with a collectivist mind-set. Despite the interesting results, and the fact that collectivistic priming reduced perceived individual responsibility, collectivistic priming does not imply that responsibility is shared with group members.

However, as mentioned above, for Soraperra et al. (2017), collaboration, with the underlying assumption of diffusion of responsibility, was not a necessary condition for increasing dishonesty. Mere exposure to the (dishonest) norm would be a sufficient condition. Although not entirely consistent, the results in this literature seem to suggest the relevance of

the diffusion of responsibility hypothesis; however, a lack of direct empirical evidence remains.

**Cheating and Guilt**

In characterizing collective cheating, recent research showed that people who recall a past experience of collective dishonesty do not appear to mention any guilt (Zanetti & Butera, 2022). Actually, participants of this study consistently presented the act as a positive collective experience, and mention that responsibility was shared with the other members of the group. This study suggests that when recalling an event of collective cheating people may experience little or no guilt because of the diffusion of responsibility, but the qualitative nature of this study prevents from drawing firm conclusions. Extant research on emotion, however, has shown that people indeed feel guilty if they recognize and assess their own responsibility in the wrongdoing (e.g., Izard, 1977; Smith & Ellsworth, 1985; Tangney & Dearing, 2002). Emotions have not received enough attention in the study of cheating; however, in the literature on emotions, guilt appeared to be positively linked to the transgression of norms (e.g., Tangney, 1991, 1992).

Guilt, as shame and embarrassment, is considered to be a moral (e.g., Tangney, 1991; Tangney & Dearing, 2002; Tangney et al., 2007) and a self-conscious (Niedenthal et al., 2009; Tangney et al., 2007) emotion. Moral emotions are defined as such because their experience or anticipation plays a key role in the relation between moral standards and moral behaviours or decisions in everyday life: "When we sin, transgress, or err, aversive feelings of shame, guilt, or embarrassment are likely to ensue." (Tangney et al., 2007, p. 347). This literature defines self-conscious emotions as those that have a reflexive and self-evaluative component (Niedenthal et al., 2009; Tangney et al., 2007). Indeed, guilt, as shame and embarrassment, is an emotion implying the evaluation of the self and/or of one’s own behaviour in comparison with some existing moral standards (Niedenthal et al., 2009).

Importantly, and as mentioned before, due to its reflexive character, guilt implies a certain degree of self-consciousness as well as the awareness of the negative consequences that result from a specific behaviour. The experience of guilt is associated with the perception that what happens—or what happened in past events—is one's own responsibility, one's own 'fault' (e.g., Tangney & Dearing, 2002). Thus, considering the central role of responsibility in the experience of guilt, we can suppose the potential impact that a collective versus individual cheating setting would have on this emotion. Accordingly, if the diffusion of responsibility does indeed take place in collective cheating experiences—immediately or *a posteriori*—to a greater extent than in individual cheating experiences, we can assume that guilt is felt to a lesser extent in relation to (past) events of collective cheating compared to individual cheating ones. The present study tests for the first time the hypothesis that the past experience of collective cheating elicits lower levels of guilt than individual cheating through reduced perceived responsibility.

## Hypotheses and Overview

In Experiment 1, we experimentally manipulated participants' memories, asking them to describe the memory of either an individual cheating event or a collective cheating event. We tested the hypothesis that the activation of a past event of collective cheating leads to a reduction, compared to individual cheating, in perceived individual responsibility (H1) and guilt (H2). Moreover, we expected that perceived responsibility would capture a significant part of variance shared between the kind of cheating experience—individual and collective—and guilt (H3), consistently with a mediation model. This mediation model is justified by the aforementioned considerations on diffusion of responsibility; it is not deemed as the only mediation model possible but the one derived by the present theoretical analysis (see Fiedler et al., 2018). Experiment 2 was planned to replicate the main results of Experiment 1 and confirm the mediation analysis (H3).

In Experiments 1 and 2, we also explored additional research questions (RQ); in particular, with regard to the emotional experience, we investigated the feeling of shame in past cheating events (RQ1 and RQ2). As explained in Supplementary Material A, this was done because an overlap exists between shame and guilt; these emotions share some common dimensions and are often confused. For the sake of full disclosure, the RQs, the materials developed to address them, and the analyses are presented in Supplementary Online Material A.

Following the recommendations of Spencer et al. (2005) regarding the study of psychological processes, we planned Experiment 3 (preregistered on https://aspredicted.org/NVE_PTB[5]) to better understand the relation between responsibility and guilt in collective cheating, thus employing an experimental casual chain approach. As Spencer et al. suggested, in this experiment, we experimentally manipulated what we found to be a mediator of interest in previous experiments: perception of responsibility, operationalized as the level of individual accountability in collective cheating past experiences. This approach, which is recommended when it is feasible to manipulate the process of interest (in our case the personal accountability in a collective wrongdoing), allows to avoid errors regarding the casual role of responsibility. We thus tested the hypothesis that low accountability in past collective cheating, compared to high accountability, would lead to lower levels of reported guilt (H4).

For each experiment, power analyses determining the sample size, data exclusions, all manipulations and measures are reported in the method sections of this manuscript and in the

[5] There is a typing error in the presentation of the hypotheses (point 5). In the first sentence of H1, the variable of interest is guilt ("feeling of guilt") and not responsibility.

Supplementary Materials A for RQs. The data, syntax and materials for the three experiments are available on https://osf.io/ke9m8/?view_only=5087ef73e436402aba1b9d1e8f7a81fc.

## Experiment 1

### Method

#### *Participants*

An a priori power analysis using G*Power (Faul et al., 2009; Perugini et al., 2018) suggested a sample size of 969 participants ($f = 0.10$, $\alpha = .05$, $1\text{-}\beta = .80$). We were conservative in the choice of a small effect size because these assumptions had not been tested in the literature. Participants were recruited via Amazon Mechanical Turk using CloudResearch (formerly TurkPrime; see Litman et al., 2017). Participants were paid $3.60 per hour, more than the reservation wage of $1.38 per hour, i.e., the minimum compensation that could be accepted for performing a task (Horton & Chilton, 2010).

In this experiment, we recruited 970 participants. All participations were checked in terms of compliance with the instructions. As a consequence, 127 participants were dropped because the description of the event they wrote did not comply with the experimental instructions. The type of event to be recalled and described was clearly specified in the instructions and depended on the random assignment to one of the three conditions—control, collective cheating, or individual cheating (see below)[6]. The final sample, for the analysis,

[6] In this experiment as in the following, the number of dropped participants might seem high, but it is directly related to the theoretical distinction highlighted above between individual and collective cheating. Participants were therefore removed from the analyses when the situation they reported did not reflect our operationalisation of either individual or collective cheating. In particular, for collective cheating events, we removed participants who were not objectively responsible in the event they reported (e.g., participants who were unaware of the dishonesty at the time) or who did not include others in the cheating (e.g., a student who copied from another without the latter's knowledge).

was $N = 843$, 13% less than expected. According to a sensitivity analysis (G*Power), the final sample allowed to detect an effect size of $f = 0.11$. The average age of participants was 37.43 years ($SD = 12.34$). The sample was equally distributed across sexes (46.1% female) and almost all participants (97.6%) were living in the United States of America at the time of the experiment. The dropped participants were similar to the retained participants in age, $t(965) = 1.27$, $p = .20$, $d = .12$, and gender, $\chi 2$ (1, $N = 959$) = .25 , $p = .62$, $\varphi = .02$. Moreover, more participants were eliminated from the cheating conditions (56 excluded participants in the collective and 67 in the individual condition) compared to the control (4 excluded), showing a significant relation between these two variables, $\chi 2$ (2, $N = 970$) = 79.64, $p < .001$, $V = .29$. This result is not surprising given that the acceptance criteria for the control condition were less strict—as long as the answer was relevant—compared to the specificity of the criteria in the cheating conditions (see below).

***Procedure***

The experiment was presented as a study exploring emotions in life events. Participants signed a consent form before starting the experiment. We chose to manipulate the past experience of collective and individual cheating by having people describe an autobiographical event in writing, and then completed a survey with measures of responsibility, guilt and some sociodemographic information (measures of shame and behavioural intentions were also presented in the survey, see Supplementary Online Materials A). The choice of a retrospective method was dictated by the desire to collect not only participants' experiences but also their contemplation and construction of past events within the framework of the present (Scott & Alwin, 1998). According to prior research, autobiographical memories have been successfully used as an emotional induction approach (e.g., Gerrards-Hesse et al., 1994; Graton & Ric, 2017; Maner et al., 2007).

We choose to use the autobiographical memory approach for its validity, but our hypothesis would not have changed if we had chosen another experimental paradigm such as the use of scenarios. In fact, regarding our hypothesis about a decrease in perceived responsibility in collective cheating experiences, research in criminology showed that when an observer/witness judged a person's responsibility for a crime, the level of responsibility attributed to the actor was lower if the wrongdoing was committed by more than one person compared to the individual alone (e.g., Feldman & Rosen, 1978).

***Independent Variable***

The experimental manipulation intervened in the first part of the experiment, when participants were asked to describe a personal past event. Participants were randomly assigned to one of three experimental conditions: control condition vs. collective cheating vs. individual cheating.

In the *control condition*, we asked participants to remember and describe a typical event of a typical day of their life (e.g., Graton & Ric, 2017; Graton et al., 2016). In the *collective cheating condition*, the following instructions were presented to the participants: "Please take a moment to remember an event of collective cheating, when you cheated with one or more people (= you did something not allowed, deliberately with classmates, colleagues, team members, …). You can think of an event in any context you wish—in school, at work, in sports or other. You will be invited to describe in as much detail as possible the event you recalled." In the *individual cheating condition*, the instructions were the following: "Please take a moment to remember an event of individual cheating, when you cheated alone (= you did something not allowed, deliberately). You can think of an event in any context you wish—in school, at work, in sports or other. You will be invited to describe in as much detail as possible the event you recalled.".

For all conditions, we excluded from the analyses participants who described: (a) non-memories (irrelevant texts), (b) memories that did not comply with the experimental manipulation (individual cheating in the collective condition, collective cheating in the individual condition, any form of cheating in the control condition), and (c) memories of cheating as a witness or a victim.

### *Measures*

**Responsibility.** To measure perceived responsibility, we asked participants to report how responsible they felt with the following item: "In the event you just described, to what extent do you feel responsible?". The rating was made on a 7-point scale from 1 (not at all responsible) to 7 (totally responsible).

**Guilt.** To assess guilt, participants were told to report the extent to which they felt guilty about the event (e.g., Graton & Ric, 2017; Graton et al., 2016) with the following item: "To what extent do you feel guilty?". The rating was made on a 7-point scale from 1 (not at all guilty) to 7 (totally guilty).

**Sociodemographic Information.** At the end of the questionnaire, we asked participants some sociodemographic information: age, gender, nationality(ies), country where they lived at the moment of the experiment, highest diploma obtained, field of study/profession, device used to complete the experiment. Only the response to age, gender, and country where they were living was mandatory.

## Results

Preliminary analyses with age and gender did not change the main results. These variables were therefore dropped from the main analyses.

### *Hypothesis Testing*

To test the hypotheses that the past experience of collective cheating leads to lower reported responsibility (H1) and guilt (H2) that the one of individual cheating, one-way

ANOVAs with planned comparisons were performed. Planned comparison were also used to test the additional hypothesis that expected lower responsibility and guilt in the control condition compared to the two cheating conditions. The independent variable was decomposed in two orthogonal contrasts. The first contrast, $X_{control}(0)$, $X_{collective}(-1)$, $X_{individual}(1)$, tested the main hypotheses H1 and H2, and the second contrast tested the difference between the control condition and the cheating conditions, $X_{control}(-2)$, $X_{collective}(+1)$, $X_{individual}(+1)$ (e.g., Brauer & McClelland, 2005). If result of Shapiro-Wilk test showed a significant deviance from normality for one measure, Mann-Whitney test was conducted as a robustness check (these results are provided in footnotes).

For *responsibility*, as shown in Table 1, the contrast between collective cheating and individual cheating was significant, $t(838) = 4.32$, $p < .001$, $d = 0.40$. The contrast between the control condition and the two experimental conditions—collective cheating and individual cheating—was not significant, $t(838) = 0.87$, $p = 0.387$, $d = 0.12$[7]. These results showed that participants reported lower levels of responsibility in the collective cheating condition than in the individual cheating condition in support of H1.

[7] Given the significant deviance from normality for responsibility, $W(841) = .725$, $p < .001$, a Mann-Whitney test was conducted. Results indicated a significant difference between the two experimental conditions, $U(N_{collective} = 216, N_{individual} = 249) = 19439.50$, $z = 5.60$, $p < .001$, $r = .26$: Participants in the collective cheating conditions expressed less responsibility compared to participants in the individual condition. The difference between the control group and the two collective cheating conditions was not significant, $U(N_{control} = 376, N_{cheatings} = 465) = 82357.000$, $z = 1.56$, $p = .120$, $r = .05$.

**Table 1**

*Means and Standard Deviation for the Responsibility and the Guilt Scores*

| Measure | | Control Group | Collective Cheating | Individual Cheating |
|---|---|---|---|---|
| Responsibility | *M* | 5.97 | 5.78 | 6.31 |
| | *SD* | 1.36 | 1.43 | 1.20 |
| Guilt | *M* | 2.26 | 4.31 | 4.65 |
| | *SD* | 1.80 | 2.04 | 2.05 |

As for *guilt*, the first contrast between collective cheating and individual cheating was marginally significant, Welch's $t(454.028) = 1.80$, $p = .072$, $d = 0.18$. The second contrast between the control condition and the two experimental conditions—collective cheating and individual cheating—was significant, Welch's $t(823.937) = 16.74$, $p < .001$, $d = 2.30$[8]. A higher level of guilt was reported in the individual cheating condition compared to the collective cheating condition, even if this result did not reach the usual threshold for significance (although it did with the Mann-Whitney test, see footnote). These results provide partial support for H2.

Given the results, we were unable to test H3 with the three conditions. Indeed, the effect of our manipulation on responsibility and guilt was not in the same direction, due to the unexpected position of the control condition between the two experimental conditions in the responsibility variable. Thus, a mediation analysis with the three conditions would not make

[8] Given a significant deviance from normality for guilt, $W(839) = .847$, $p < .001$, a Mann-Whitney test was conducted. Results indicated a significant difference between the collective cheating and the individual cheating conditions, $U(N_{collective} = 216, N_{individual} = 248) = 23821.50$, $z = 2.09$, $p = .037$, $r = .10$: Participants in the collective cheating condition reported lower levels of guilt compared to participants in the individual condition. Results also indicated that the difference between the control group and the two cheatings conditions was significant, $U(N_{control} = 375, N_{cheatings} = 464) = 37271.00$, $z = 14.61$, $p < .001$, $r = .50$.

sense. However, the theoretical hypothesis H3 only included collective and individual cheating, and we therefore conducted a mediation analysis with only the two cheating conditions to test H3.

***Post Hoc Analyses***

We conducted a mediation analysis using PROCESS (Hayes, 2022). We excluded the control group from the analysis, and we tested if responsibility could account for part of the variance shared between the two remaining experimental conditions—individual and collective cheating—and guilt (H3). Results are presented in Figure 1. The overall mediation model was significant, $F(2, 460) = 11.66$, $p < .001$, $R^2 = .05$. A first model showed a marginally significant effect of the type of cheating on guilt, $b = 0.36$, $t(461) = 1.86$, $p = .06$ and a second model a significant effect of the type of cheating on responsibility—our mediator of interest, $b = 0.54$, $t(461) = 4.43$, $p < .001$. In a third model, where responsibility and the type of cheating were introduced as predictors of guilt, results showed a significant effect of responsibility on guilt, $b = 0.32$, $t(460) = 4.44$, $p < .001$ and that the type of cheating was no longer significant, $b = 0.18$, $t(460) = 0.97$, $p = 335$. The Sobel test performed with Preacher and Leonardelli's (2010) software showed a significant reduction in explained variance by our independent variable, $z = 3.21$, $p < .005$.

**Figure 1**

*Experiment 1: Effect of the Experimental Conditions (Individual vs. Collective Cheating) on Guilt, with Responsibility as Mediator*


*Note.* All coefficients are unstandardized, and asterisks indicate significant paths (***$p <$ .001).

**Discussion**

The results of Experiment 1 revealed a difference between collective and individual cheating past experiences in the feelings of responsibility (H1) and guilt (H2). As expected, participants reported less responsibility and guilt after the recall of participation in a collective cheating event compared to participation in an individual one. The significant and medium-size difference between the past experience of collective and of individual cheating in terms of responsibility lends support to the hypothesis of diffusion of responsibility as one of the mechanisms underlying collective cheating: People felt lower levels of individual responsibility when having cheated as a group. The results also showed that participants reported higher levels of guilt in the individual cheating condition compared to the collective cheating condition, but this difference was significant with the non-parametric test and only marginal with the parametric test. We also note that we found the same pattern for shame—a

significant difference between the cheating conditions—, which is consistent with the overlap found in the literature between these two emotions (see Supplementary Material A).

Consistently with our mediation model, results also suggested that perceived responsibility accounted for a significant portion of the variance shared between the type of cheating and guilt (H3). Cheating in a collective manner decreased reported guilt as compared to individual cheating, which is explained by the lower levels of responsibility reported when cheating was done as a group.

In this first experiment, the control condition did not function as such, since the level of perceived responsibility was high, contrary to what was expected. However, retrospectively, this result is not surprising if we consider people's tendency—or their biological necessity (e.g., Leotti et al., 2010)—to seek a sense of control over their everyday lives (e.g., Rotter, 1966). Because of this result, we had to conduct supplementary analyses without the control condition to test our mediation hypothesis as planned and explain the relation between the type of cheating and guilt. The results were supportive of our H3, but *post hoc*, and with the effect of the type of cheating on guilt that was only marginal. Moreover, responsibility and guilt were measured with a single item each. Thus, we decided to replicate the main results of Experiment 1 with a new study. Experiment 2 was the designed with only the individual and collective cheating conditions.

## Experiment 2

### Method

#### *Participants*

An *a priori* power analysis using G*Power suggested a sample size of 788 participants ($d = 0.20$, $\alpha = .05$, $1\text{-}\beta = .80$). Given the results of Experiment 1, i.e., small effect sizes for feeling of guilt (total effect model and mediation model), we considered again a small effect

size for this replication. As for Experiment 1, participants were recruited via Amazon Mechanical Turk using CloudResearch under the same conditions.

In anticipation of some exclusions, as in Experiment 1, we oversampled to 1055 participants. As for Experiment 1, all participations were checked in terms of compliance with the instructions, looking at the content of the written text (autobiographical memory). We excluded 285 participants because the description of the event did not comply with the instructions, as in Experiment 1. The final sample, for the analysis, was $N = 770$, a bit less than planned. According to a sensitivity analysis (G*Power), the final sample allowed to detect an effect size of $d = 0.20$. The average age of participants was 38.95 years ($SD = 12.22$). The sample was equally distributed across gender (54.7% female) and almost all the participants (99.7%) were living in the United States of America at the time of the experiment. The dropped participants were similar to the retained participants in gender, $\chi 2$ $(1, N = 1043) = 3.34$, $p = .068$, $\varphi = .06$. However, dropped participants were slightly younger ($M = 36.63$, $SD = 11.42$) compared to retained participants ($M = 38.95$, $SD = 12.22$), Welch's $t(539.74) = 2.87$, $p = .004$, $d = .19$, and more participants were eliminated from the individual cheating condition (169 excluded participants) compared to the collective (116 excluded), with a significant relation between these two variables, $\chi 2$ $(1, N = 1055) = 9.35$, $p = .002$, $\varphi = .09$. This last result may be to participants being more likely to consider all cheating as individual—probably given their personal involvement—when in fact one or more people were involved. This was less the case when the instruction was to describe collective cheating.

***Procedure***

The procedure was identical to Experiment 1. Participants were asked to describe an autobiographical memory and then completed a survey with measures of responsibility, guilt

(and shame, see Supplementary Online Materials A), and some sociodemographic information.

### *Independent Variable*

The experimental manipulation was the same as in Experiment 1, except that in the present experiment only the collective and the individual cheating conditions were presented. Participants were randomly assigned to one of the two conditions when invited to describe the past event.

### *Measures*

**Responsibility.** We created two items to assess the individual responsibility *in* the past experience of collective cheating: "To what extent… Do you think you are responsible for your cheating in this event?", "To what extent… Do you feel responsible for your cheating in this event?". Ratings were made on a 7-point scale from 1 (not at all responsible) to 7 (totally responsible). These two items were found to be highly positively correlated, $r(766) = .81$, $p < .001$. The mean of these two items was computed and employed for the analysis.

**Guilt.** To assess guilt, we asked participants to report to what extent they were feeling guilty, as for Experiment 1, but three other items were also proposed, inspired from the Trauma-Related Guilt Inventory (Kubany et al., 1996). Thus, the four items presented were: "How guilty do you feel?", "How bad do you feel?", "Do you blame yourself?" and "Do you think you have done something you should not have done?". Ratings were made on a 7-point scale from 1 (not at all) to 7 (totally). The last item showed a ceiling effect, and its removal increased the reliability of the scale; thus, we decided to drop it. Cronbach's alpha for the three remaining items was .91. The mean of these three items was computed and employed for the analysis.

**Sociodemographic information.** At the end of the questionnaire, we asked for the same information as for Experiment 1.

## Results

Preliminary analyses with age and gender did not change the main results. These variables were therefore dropped from the main analyses.

### *Hypotheses Testing*

To test the hypotheses that the past experience of collective cheating leads to a reduction of responsibility (H1) and guilt (H2) compared to the past experience of individual cheating, two-sample t-tests were performed.

For responsibility, since the Levene's test for heterogeneity of variances was significant, $F = 125.21$, $p < .001$, indicating unequal variances, results of the Welch's t-test were considered. As shown in Table 2, participants in the collective cheating condition reported significantly lower levels of responsibility compared to participants in the individual cheating condition, Welch's $t(592.04) = 8.67$, $p < .001$, $d = 0.62$.[9] Consistent with findings of Experiment 1, these results showed less perceived responsibility when a collective cheating was experienced, compared to an experience of individual cheating.

**Table 2**

*Means and Standard Deviation for the Responsibility and the Guilt Score*

| Measure | | Collective Cheating | Individual Cheating |
|---|---|---|---|
| Responsibility | *M* | 5.96 | 6.70 |
| | *SD* | 1.50 | 0.77 |
| Guilt | *M* | 3.70 | 4.58 |
| | *SD* | 2.05 | 1.93 |

[9] Since a Shapiro-Wilk test showed a significant deviation from normality for responsibility, $W(767) = .61$, $p < .001$, a Mann-Whitney test was also conducted. Results indicated that the difference between individual and collective cheating was significant, $U(N_{individual} = 375, N_{collective} = 393) = 51280.00$, $z = 8.67$, $p < .001$, $r = .31$.

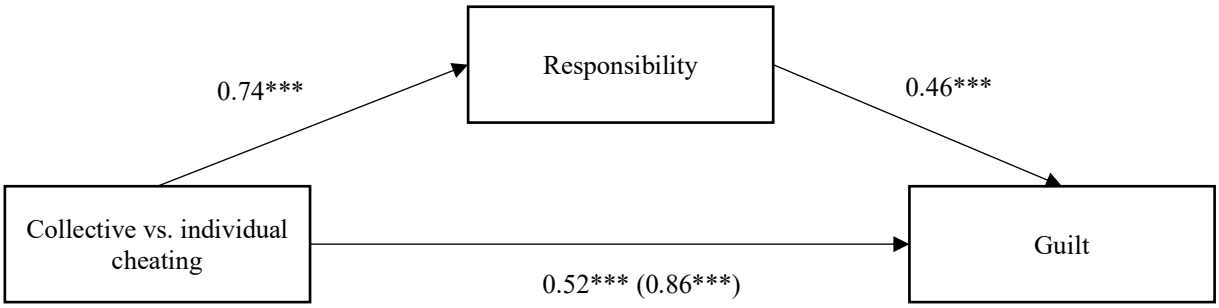
As for guilt, participants in the collective cheating condition reported significantly lower levels of guilt compared to participants in the individual cheating condition, $t(767) = 6.11$, $p < .001$, $d = 0.44$.[10] Again, consistent with findings of Experiment 1, these results showed less guilt after recalling a collective cheating experience compared to an individual one.

To test if perceived responsibility could be a mediator of interest in the relationship between the kind of cheating—individual or collective—and guilt (H3), we conducted a mediation analysis using PROCESS (Hayes, 2022). The overall mediation model was significant, $F(2, 764) = 51.65$, $p < .001$, $R^2 = .12$. A first model showed a significant effect of the type of cheating on guilt, $b = 0.86$, $t(765) = 6.01$, $p < .001$ and a second model a significant effect of the type of cheating on responsibility—our mediator of interest, $b = 0.74$, $t(765) = 8.51$, $p < .001$. In a third model, where responsibility and the type of cheating were introduced as predictors of guilt, results showed a significant effect of responsibility on guilt, $b = 0.46$, $t(764) = 8.01$, $p < .001$ and that the type of cheating remained significant, $b = 0.52$, $t(764) = 3.63$, $p < .001$. The Sobel test showed a significant reduction in explained variance by our independent variable, $z = 5.87$, $p < .001$. This result showed that responsibility explained a significant part of variance shared between the type of cheating and guilt.

[10] Given the significant deviation from normality for guilt, $W(767) = .92$, $p < .001$, a Mann-Whitney test was conducted. Results indicated that the difference between individual and collective cheating was significant, $U(N_{individual} = 375, N_{collective} = 394) = 55560.50$, $z = 5.97$, $p < .001$, $r = .22$.

**Figure 2**

*Experiment 2: Effect of the Experimental Conditions (Individual vs. Collective Cheating) on Guilt, with Responsibility as Mediator*




*Note.* All coefficients are unstandardized, and asterisks indicate significant paths (***$p <$ .001).

**Discussion**

Results of Experiment 2 are consistent with those of Experiment 1 and replicate the main findings. We found the same difference between collective and individual cheating experience in the feelings of responsibility and guilt: less responsibility and guilt after recalling a collective cheating experience than an individual one. These medium and small effect sizes, respectively, lend support to the diffusion of responsibility hypothesis. Experiment 2 enabled to properly test the mediation hypothesis showing that part of the variance shared in the relation between the type of cheating and guilt could be accounted by responsibility. As in Experiment 1, we found the same pattern for shame—a significant difference between the cheating conditions and support for the mediation hypothesis—, which again is consistent with the overlap found in the literature (see Supplementary Material A).

H1 and H2 regarding the effect of the collective and individual cheating experience on the feelings of responsibility and guilt received convergent support from both experiments. The mediational role of responsibility was tested *post hoc* in Experiment 1 and emerged as a mediation effect in Experiment 2. Thus, we designed Experiment 3 to conduct an experimental test of the relation between responsibility and guilt in collective cheating to

prevent erroneous inferences regarding responsibility's causal role (Spencer et al., 2005). In the following experiment, we focused on this relation, manipulating responsibility—considered as a mediator of interest in previous experiments—and assessing its effect on guilt in collective cheating experiences. Such a manipulation was also instrumental to *directly* test the diffusion of responsibility hypothesis: We asked the participants to recall a past collective cheating event in which no personal accountability could be traced due to cheating in a group versus an event in which they were accountable for the group cheating. As this was a critical test, we pre-registered the hypothesis that low accountability in a past collective cheating, compared to high accountability, would lead to lower levels of reported guilt (H4).

## Experiment 3 (preregistered)

### Method

#### *Participants*

Previous results showed a positive relation between responsibility and guilt, with a small effect size for Experiment 1 ($r$ = .12) and a small to medium effect size for Experiment 2 ($r$ = .32). For this reason, we computed two *a priori* power analyses using G*Power. The first one showed that if the effect size was medium ($d$ = 0.5, $\alpha$ = .05, 1-$\beta$ = .8), we would need 128 participants to detect it. The second showed that if the effect size was small ($d$ = 0.2, $\alpha$ = .05, 1-$\beta$ = .8), we would need 788 participants. As for the previous studies, participants were recruited via Amazon Mechanical Turk using CloudResearch under the same conditions.

For the first data collection, 151 participants were recruited. All participants were checked in terms of compliance with the instructions. A total of 25 participants were excluded from the analysis because of non-compliance with the instructions, resulting in a sample of $N$ = 126. The analyses revealed that the effect size was indeed small ($d$ = .25), and we continued the data collection until the sample size required to detect a small effect size was reached. We recruited a sample of 1042 participants (including those of the first data collection). Based on

the same compliance check, 254 participants were dropped because the description of the event did not comply with the instructions. The final sample for the analysis was $N = 788$, as required by the power analysis. The average age of participants was 36.12 years ($SD = 10.74$). The sample was almost equally distributed across sexes (51.8% female) and almost all the participants (98.9%) were living in the United States of America at the time of the experiment. The dropped participants were similar to the retained participants in age, $t(1040) = 1.01$, $p = .31$, $d = .07$, and gender, $\chi 2$ (1, $N = 1033$) = .01 , $p = .94$, $\varphi = .00$. However, more participants were dropped from the high accountability condition (156 excluded participants) compared to the low (98 excluded), showing a significant relation between these two variables, $\chi 2$ (1, $N = 1042$) = 27.93, $p < .001$, $\varphi = .16$. This may be explained by the fact that, in terms of moral disengagement mechanisms (Bandura, 1990, 1999), it may be more comfortable to remember—or confess—episodes that involve a low degree of responsibility for dishonesty.

***Procedure***

The experiment was presented as a study exploring collective cheating and emotions. As for Experiments 1 and 2, after signing a consent form, participants were asked to recall and describe in writing an autobiographical memory, and then completed a survey with measures of responsibility, guilt, and some sociodemographic information, see below.

***Independent Variable***

The experimental manipulation intervened when participants were invited to describe a personal memory. In this experiment we asked participants to recall only events of collective cheating, in any context. Participants were randomly assigned to two experimental conditions: low accountability vs. high accountability in collective cheating. In the low-accountability condition, the following instructions were presented to the participants: "We will ask you to remember an event of collective cheating, when you engaged in a dishonest

behaviour with one or more people (classmates, colleagues, team members for example). More precisely, you will be invited to describe in as much detail as possible an event in which you decided with one or more people to cheat. A very important point: We would like you to remember an event in which, everyone was willing to do it, everyone agreed to do it and go against the rules for the benefit of all or of one of you. Do you remember an event of collective cheating where you and other people decided to cheat?". Thus, in this condition, the cheating decision was a group decision. In the high-accountability condition, the instructions were the following: "We will ask you to remember an event of collective cheating, when you engaged in a dishonest behaviour with one or more people (classmates, colleagues, team members for example). More precisely, you will be invited to describe in as much detail as possible an event in which you convinced one or more people to cheat. A very important point: We would like you to remember an event in which, after you proposed to do it, everyone agreed to do it and go against the rules for the benefit of all or of one of you. Do you remember an event of collective cheating where you convinced other people to cheat?". In this second condition, the participant initiated the collective cheating.

***Measures***

**Responsibility (Manipulation Check).** To measure responsibility, four items were presented to participants: the two used in Experiment 2 assessing the individual responsibility *in* the past collective cheating and two additional items developed for the present experiment assessing the individual responsibility *for* the past collective cheating. Ratings were made on a 7-point scale from 1 (not at all responsible) to 7 (totally responsible). The four items were "Do you think you are responsible for your cheating in this event?", "Do you think you are responsible because your group cheated in this event?", "Do you feel responsible for your cheating in this event?" and "Do you feel responsible because your group cheated in this event?". Cronbach's alpha for the four items was .89. The mean of these four items was

computed and employed for the analysis. This measure will be used as manipulation and robustness checks.

**Guilt.** To assess guilt, we employed the same measure presented in Experiment 2. Again, we decided to drop the item "Do you think you have done something you should not have done?" because it showed a ceiling effect, and its removal increased the reliability of the scale. Cronbach's alpha for the three remaining items was .93. The mean of these three items was computed and employed for the analysis.

**Sociodemographic Information.** Identical information as for the previous studies were asked at the end of the questionnaire.

## Results

Preliminary analyses with age and gender did not change the main results. These variables were therefore dropped from the main analyses.

### *Manipulation Check*

A two-sample t-test was performed on responsibility; since the Levene's test for equality of variances was significant, $F = 28.14$, $p < .001$, indicating unequal variances, we considered results of the Welch's t-test. Participants in the high accountability condition ($M = 5.89$, $SD = 1.22$) reported significantly higher level of responsibility compared to participants in the low accountability condition ($M = 5.32$, $SD = 1.57$), Welch's $t(784.084) = 5.76$, $p < .001$, $d = 0.40$[11]. These results showed higher responsibility when accountability in past

[11] A Shapiro-Wilk test showed a significant deviation from normality for responsibility, $W(788) = .87$, $p < .001$. We conducted a Mann-Whitney test as a robustness check. Results indicated that the difference between low and high accountability was significant, $U(N_{Low} = 454, N_{High} = 334) = 60146.00$, $z = 5.02$, $p < .001$, $r = .18$.

collective cheating was high, compared to the low accountability condition, which was the purpose of our experimental manipulation.

***Hypotheses Testing***

To test the hypothesis that high accountability in past collective cheating, compared to low accountability, leads to an increase in guilt (H4) a two-sample t-test was performed. Participants in the high accountability condition ($M = 4.05$, $SD = 2.09$) reported significantly higher level of guilt compared to participants in the low accountability condition ($M = 3.74$, $SD = 2.13$), $t(786) = 2.00$, $p = .046$, $d = 0.14$[12]. This finding showed less guilt when accountability in collective cheating was low, compared to high.

***Supplementary Analysis***

As a robustness check for H4, we conducted a mediation analysis using PROCESS (Hayes, 2022) to test if responsibility explained a significant part of variance shared between accountability and guilt. The overall mediation model was significant, $F(2, 785) = 58.86$, $p < .001$, $R^2 = .13$. A first model showed a significant effect of the accountability (low vs. high) on guilt, $b = 0.30$, $t(786) = 2.00$, $p = .046$ and a second model a significant effect accountability on the mediator—responsibility, $b = 0.57$, $t(786) = 5.55$, $p < .001$. In a third model, where responsibility and accountability were introduced as predictors of guilt, results showed a significant effect of responsibility on guilt, $b = 0.52$, $t(785) = 10.64$, $p < .001$ and accountability was no longer significant, $b = 0.01$, $t(785) = 0.04$, $p = .97$. The Sobel test showed a significant reduction in explained variance by our independent variable, $z = 5.00$, $p < .001$. These results showed that responsibility captured a significant portion of variance

[12] Since a Shapiro-Wilk test showed a significant deviation from normality for guilt, $W(788) = .91$, $p < .001$, a Mann-Whitney test was performed. Results indicated that the difference between low and high accountability was marginally significant, $U(N_{Low} = 454, N_{High} = 334) = 69883.50$, $z = 1.89$, $p = .059$, $r = .07$.

shared between the accountability in collective cheating and guilt. Low accountability in past experience of collective cheating (i.e., when cheating was a collective affair) led to less guilt, due to reduced perceived responsibility.

**Discussion**

In Experiment 3 we focused on past experience of collective cheating and studied the effect of responsibility by manipulating individual accountability. Results showed that participants indeed reported significantly more guilt when they could be held accountable of the past collective cheating than when they were not. This result supports the mediation effect highlighted in the two previous experiments and emphasizes the connection between responsibility and guilt in cheating. This finding provides direct support to the diffusion of responsibility hypothesis as a moral disengagement mechanism in collective dishonesty: When people could not be held accountable of the collective cheating event, they reported lower levels of guilt than when they could.

Interestingly, we note that the effect size of the difference on the responsibility measure (the manipulation check) is small-medium ($d = 0.40$). This result is not surprising because, although we have manipulated accountability in collective cheating, the cheating described remains a collective one, thus involving the presence of others in the wrongdoing, allowing to decrease the personal responsibility according to the diffusion of responsibility hypothesis.

## General Discussion

Our first two experiments revealed a difference between individual and collective cheating past experiences in terms of perception of responsibility and feeling of guilt. Participants felt less responsible and less guilty when cheating in a collective manner compared to when they acted alone. The effect size for responsibility was small to medium and that for guilt was small, but it was consistently found in both experiments 1 and 2.

Moreover, in both experiments, we found that responsibility was a mediator of interest in the relation between the kind of cheating and guilt, consistent with a mediation path: People who engaged in the past in a dishonest behaviour as a group felt *a posteriori* less guilty, and this was partly due to the reduced perception of one's own responsibility in collective settings. More particularly, with our third experiment we have been able to demonstrate the centrality of responsibility in the experiences of collaborative cheating. When cheating in a group was done as a group decision, implying a reduction in individual responsibility, people felt less guilty compared to situations in which they cheated in a group, but they bore the responsibility of initiating the cheating.

**Contributions**

The results of the experiments we conducted provide empirical support for the existence of a difference between the mechanisms involved in individual and collective cheating experiences. Collective cheating seems to afford differential involvement as compared to individual cheating, since people more light-heartedly declare themselves less concerned by the burden of responsibility and guilt. This brings convergent and experimental evidence to previous qualitative results showing that people interviewed about past acts of collective cheating never mentioned guilt, happily shared responsibility with the other group members, and all in all kept fond memories of collaborative companionship (Zanetti & Butera, 2022).

Even more important, these findings contribute to the debate about why one cheats more in a group than alone, i.e., the so-called "dishonesty shift in groups" (Kocher et al., 2018). Of course, the present research is not concerned with predictors of individual vs. collective cheating, but still, for the first time, these results provide empirical evidence for the diffusion of responsibility hypothesis as a mechanism involved in collective cheating. Several theoretical accounts proposed diffusion of responsibility as a major underlying mechanism for

collective cheating (e.g., Conrads et al., 2013), but this hypothesis had received so far only indirect support (e.g., Mazar & Aggarwal, 2011). In the present research, we experimentally showed clear evidence that indeed responsibility could be shared within a group when it comes to collective cheating, thereby decreasing the perception of one's own responsibility as compared with individual cheating. Our third study supported this result and delved into the process by showing that it is indeed when people have the same role as other members of the cheating group that they feel the lest responsible, less than when they have had a leading role in the collective cheating event. Consistent with this interpretation, in the three experiments lower levels of responsibility predicted lower levels of the sense of guilt associated with the transgression made. People acting dishonestly in/as a group feel less responsible and less guilty than those acting alone.

**Limitations and Future research**

Some limitations of the present research are worth mentioning. As noted in the instructions for each experiment, we asked participants to recall an event of cheating in different domains. As a result, participants reported events that took places in various fields, such as school, work, sports, romantic relationships, for instance. This was not the interest of our experiments, but it might be worthwhile to study in future research if there are differences across contexts. A difference in terms of the mechanisms involved in the association between responsibility and guilt could be expected depending on the context in which the collective cheating took place, in particular on who can be considered the victim(s). Moral disengagement mechanisms (Bandura, 1990, 1999) could arise more easily if the victim is an institution or a company, such as a school or one’s workplace, than if the victim is a clearly identified person (or group of people), like in a sports competition or in a romantic relationship. Moral disengagement mechanisms, especially blaming the victim, could take a different meaning according to such contexts.

Moreover, in relation to collective cheating experiences, it would be interesting to investigate whether a difference exists according to the number of group members: Is the reduction of responsibility and guilt a function of the size of the group? Indeed, as discussed in the introduction, classic and more recent research has shown how the size of the group influence the attribution of the responsibility for the wrongdoing (e.g., Feldman & Rosen, 1978; Rowan et al., 2022), with decreased personal responsibility when the group is larger compared to smaller. These results echo those found in other collective phenomena, such as social loafing, where the size of the group has been shown to reduce personal accountability and personal effort (see Karau & Williams, 1993 for a meta-analytic review).

## Conclusion

People cheat more when they are in a group than when they are alone. To explore this phenomenon, we conducted a series of experiments testing the diffusion of responsibility hypothesis and its impact on guilt in collective cheating experiences. We found that participants who recalled collective (versus individual) cheating events reported lower levels of responsibility and guilt: Cheating together makes people feel less responsible and, therefore, less guilty.

# CHAPTER 4:

## Cooperative Dishonesty: When Working Together Means Cheating Together

**Abstract**

Cooperation is often valued for its benefits in the cognitive, affective, interpersonal, motivational, and learning domains. However, people can also cooperate more dishonestly for the good of themselves and/or others. Research has argued that cooperation seems to be at the root of collective cheating; this work provides an experimental test of such conjecture. A pilot study showed the association between collective cheating and cooperation: The more participants ($N$ = 210), in dyads, cheated as a group, the more they reported high levels of cooperation. In the main experiment, where participants ($N$ = 161) worked in groups, we manipulated the duration of cooperation of the group, either one or four rounds. Participants who stayed throughout the four tasks with the same members (four rounds of cooperation) cheated together to a greater extent than participants who constantly changed their group across the four tasks (one round of cooperation with the same members).

*Keywords*: cooperation, group continuity, collective cheating, collaborative dishonesty, ingroup processes

*Note.* The present paper has been submitted for publication as: Zanetti, C., Surret, F. L., Darioly, A., & Butera, F. (2023). Cooperative dishonesty: When working together means cheating together. *Manuscript submitted for publication.*

## Cooperative Dishonesty: When Working Together Means Cheating Together

Many events exposing the involvement of a collective organisation in cheating regularly make the headlines. A quick look at the U.S. Securities and Exchange Commission (SEC) shows, for instance, recent telling examples of collective fraud, such as the (ethics) exams by Ernst & Young's employees (SEC, 2022a), and Deloitte's Chinese Affiliate caught for violations of audit work (SEC, 2022b). The "Monsanto papers" (Horel & Foucart, 2017), Volkswagen's emission scandal (e.g., Hotten, 2015), or collective cheating on exams at Harvard University (e.g., Pérez-Peña & Bidgood, 2012) are famous examples often mentioned when talking about collective cheating. These frauds, involving more than one person, or even very large groups, often take place in contexts where collaboration and teamwork are encouraged, such as professional and sport teams, and classrooms.

Promoted and valued for its benefits on cognitive, affective, interpersonal, motivational, and learning outcomes (e.g., Johnson & Johnson, 2009), cooperation seems to ironically play a crucial role in collective cheating, defined as "cheating together with ingroup peers" (Pulfrey et al., 2018, p. 764). Indeed, people have been found to be more dishonest when they are in a group than when they are alone (e.g., Soraperra et al., 2017). Moreover, qualitative research showed that people report cheating repeatedly with the same group and the same people, and feel more cohesive as a group after cheating together (Zanetti & Butera, 2022). However, extant studies have not yet experimentally demonstrated the existence of a cooperative basis in collective cheating.

The primary aim of this research was therefore to provide an experimental investigation of the role of cooperation in collective cheating, both in terms of antecedents and consequences. Furthermore, the originality of this project lies in the method used in the main study, which allowed us to manipulate the time group members spent working together, which seems a potential component of collective dishonesty (e.g., Abbink, 2004).

**Benefits of Cooperation in Group Work**

Cooperation occurs in social interactions defined by positive interdependence, that is interactions in which goals are common to all group members, and actions, resources, and outcomes of one are tied to those of others so that if one succeeds, the others succeed as well (Buchs et al., 2004; Deutsch, 1949; Johnson & Johnson, 2005, 2009). In the area of education, cooperation and cooperative learning have received enduring attention and are often recommended for their impact on students' learning—in terms of autonomy, achievement, active appropriation of knowledge and courses content—but also for their benefits in terms of quality of relationships and psychological health (e.g., Butera & Buchs, 2019; Johnson & Johnson, 1989). In the area of work and organizational psychology, teamwork, especially when high in cooperation, has also been found to be linked to the effectiveness of the organization (for a review on team effectiveness, see Cohen & Bailey, 1997; or Richter et al., 2011), showing for example positive relations with performance and team attitudes (e.g., Richter et al., 2011). Overall, compared to competitive or individualistic settings, conditions allowing cooperation were found to have a positive impact at the cognitive, psychological, interpersonal, motivational, and learning levels (Hattie, 2008; Johnson & Johnson, 1989, 2009).

Importantly for the present research, cooperation has been shown to positively affect the perception of bonding between members. In cooperative settings, positive interdependence has been found to lead members to perceive one's group in terms of entitativity (Johnson & Johnson, 2005), defined as the degree to which one's group is considered so uniform, coherent and cohesive that it constitutes a single entity (Campbell, 1958). Interestingly, some research has documented a human preference for being part of entitative groups (vs. non-entitative groups) (Castano et al., 2003). Moreover, it is also important—and relevant for our research—to note that it is not only the experience of

cooperation that matters, but also the anticipation of it, i.e., the anticipation of the group's entitativity. Indeed, for instance, the literature on group processes showed that anticipating cooperation (vs. competition) was found to increase the perceived similarity with the future partner (Toma et al., 2010), and that the expectation of entitativity impacted processing of information and impression formation (e.g., McConnell et al., 1997). Research also found that the anticipation of future interactions influenced the occurrence of cooperation (e.g., Heide & Miner, 2017).

***Group Continuity and Cohesion***

In educational or professional settings, cooperation often takes place with the same partners, translating a certain continuity in the composition of the group. Investigating perceived collective continuity, Sani et al. (2007) highlighted two major dimensions of perceived group continuity, namely in cultural terms (norms, beliefs, traditions) and in historical terms (coherent narration of interconnected phases and events). These two dimensions appear to be instrumental to the positive relation between the perception of collective continuity and the perception of group entitativity. These constructs have been applied to a range of groups used to collaborate, study and work together, having shared norms and culture, and a common history of cooperation and interactions (e.g., Smeekes & Verkuyten, 2015).

Not only has group continuity been shown to be positive for the feeling of cohesion and entitativity, but the literature also showed a bidirectional relation with cooperation. Indeed, trust between two or more interdependent partners depends on—and is created through—the history of interactions between them, as a process of cumulative interactions, the so-called history-based trust (see Kramer, 1999 for a review on trust in organizations). Ingroup cooperation, as well as loyalty, has been shown to be stronger when group identification was greater (e.g., Hogg & Reid, 2006). Additionally, research has shown that

group members perceived their bonds to be stronger in situations of cooperation and positive interdependence (Johnson & Johnson, 2005). In a similar vein, several studies in behavioural economics found that participants who played in the same group, contributed to a higher extent to a public good game in comparison to strangers, namely participants who repeatedly changed groups without working with the same people (e.g., Croson, 1996; Keser & Van Winden, 2000). Taken together, these findings highlight that cooperation in teamwork, especially when members can collaborate repeatedly, has the potential to develop a sense of continuity and cohesion. For all these reasons, cooperation and teamwork are often promoted and encouraged in different contexts.

**Cooperation as a Possible Underlying Mechanism of Collective Cheating**

In cooperative groups, high cohesion and solidarity among members can also lead to detrimental effects. For example, ingroup cohesion and homogeneity has been shown to lead to groupthink (Janis, 1991), a form of concurrence seeking that may results in lower quality of decision making. Interestingly, one characteristic of this phenomenon is that group members adopted an automatic belief in the (unquestionable) morality of the group, ignoring ethical and moral impact of group decisions (Janis, 1991).

Collective cheating—or collaborative dishonesty—has been described from the start as a phenomenon that reveals an important downside of cooperation in groups. Collective cheating has been defined as dishonest group behaviour, which sees members of the same group cheating together. More precisely, a recent meta-analysis on collective cheating, listed four definitional elements that emerge from the literature: “lies conducted in (i) a group setting, (ii) where more than one group member can misreport the true state of the world, (iii) group members’ outcomes are interdependent, and (iv) at least one group member benefits from the group’s dishonesty” (Leib et al., 2021, pp. 1241-1242).

Not only is dishonesty a common behaviour in groups, but research has shown that people tend to behave more dishonestly when in groups in comparison to individual settings (e.g., Cohen et al., 2009; Conrads et al., 2013; Dannenberg & Khachatryan, 2020; Gross et al., 2018; Kocher et al., 2018; Korbel, 2017; Lohse & Simon, 2021; Soraperra et al., 2017; Weisel & Shalvi, 2015). In addition, qualitative research recently described how people who remember acts of collective cheating mention cooperation, solidarity between group members, mutual aid and cohesion as recurrent and important elements of their past group behaviour (Zanetti & Butera, 2022). However, despite numerous references to a possible, even necessary link between cooperation and collective cheating, such link has not yet received experimental support. Therefore, let us review the work that makes such a link plausible.

***Relationships and Interactions Related to Collective Cheating***

As mentioned above, in academic collective cheating, people often reported cheating as always or repeatedly cooperating with the same people, the same group, the same friends (Zanetti & Butera, 2022). In line with this description, two studies have documented correlational and experimental evidence for the role of both actual familiarity and perceived similarity between members in collective cheating (respectively, Pulfrey et al., 2018; Irlenbusch et al., 2020). Ingroup membership also appeared to have an important role: Even though cheating had no impact on their own benefit, participants in a study cheated to increase benefit of another player to a higher extent if they were an ingroup rather than outgroup member (Cadsby et al., 2016).

The recent meta-analysis of Leib et al. (2021) highlighted that in repeated exposure to others' behaviour, dishonesty appeared to be contagious and changed over time. They argued that people may become accustomed to their partner's dishonesty, leading to an increase in collective cheating over time and a slippery-slope effect. Indeed, the slippery-slope metaphor,

namely a very little first dishonest step that leads to much more important dishonest behaviours in the long run, has been often discussed as a key common factor in dishonesty and its evolution, whether individual or collective (e.g., Castille & Fultz, 2018; Palazzo et al., 2012; Welsh et al., 2015; Zanetti & Butera, 2022). What is also interesting to note is that interactions and communication, typical of cooperative settings, between group members—and habituation to cheating—could lead to the creation of a new norm of dishonesty within the group. For example, in the die-rolling experiment of Kocher et al. (2018), the analysis of the chat, where group members communicated, showed a proportion of exchanged arguments in favour of the validity of a new descriptive dishonest norm. Finally, Gross et al. (2018) described a strategic choice of the partner when it comes to cheating. Indeed, these authors found that both dishonest and honest participants tended to choose a dishonest partner; in the first case, in order to have a "partner in crime" and, in the second, to do what the authors categorised as ethical free-riding, namely taking advantage of the partner's dishonesty while upholding one's own honesty. In the same vein, studying corruption in public administration, staff rotation was found to reduce bribery compared to settings where staff composition remained fixed over time (Abbink, 2004).

## The Present Research

The above literature has shown that cheating is common in collective settings. We have also seen that group continuity and cooperation, often considered for their positive consequences, may play a key role in collective cheating experiences. However, even if collective cheating and corruption seem to have collaborative roots (Weisel & Shalvi, 2015), the role of cooperation—especially if prolonged (group continuity)—has not yet received experimental support.

First, in the literature on collective cheating or collaborative dishonesty, cooperation has not been studied extensively at the empirical level. A relevant study is the one designed

by Abbink (2004), proposing an experiment where he tested the impact of staff rotation (vs. fixed) on bribery decisions. As is the case with Abbink's experiment, studies that mentioned cooperation in relation to dishonesty often explore corrupt behaviours. However, we understand collective cheating as implying ingroup dynamics, whereas corruption or bribery is often based on negotiation.

Second, a large proportion of studies on collaborative dishonesty has employed simultaneous or sequential decision structures where participants had to report an individual decision, respectively simultaneously with the other participant(s) or sequentially, namely the first person reported a decision and the other(s) knew the previous decision(s) before responding (see Leib et al., 2021 for a review of research paradigms and decision structures). The design of the present research addressed situations of positive interdependence between group members—ingroup peers—implying a joint decision structure (e.g., Azar et al., 2013; Dunaiev & Khadjavi, 2021), which means a common and collective decision. In our studies, cooperation was real and effective, participants had the opportunity to interact—they worked together on a same task—and delivered a common answer for the group.

Finally, in the experimental field of collective dishonesty, cooperation has been operationalized as one-off collaboration (e.g., Soraperra et al., 2017). In the present research, the original experimental paradigm used in the main experiment allowed us to test the role of cooperation by manipulating its duration—and the anticipation of this duration—, thus distinguishing between long-term and one-time collaboration. For this reason, to allow long-term cooperation (group continuity) vs. short-term cooperation (one-off), we invited participants to work together on four collective tasks where collective cheating could be performed, either keeping the same group for the four tasks or rotating and working with a different group for each task.

To sum up, the present research aimed to test if the phenomenon of collective cheating differs as a function of the history of cooperation among group members. To do this, we conducted two studies. The first was a pilot study aimed to explore the association between collective cheating and perceived cooperation. The second, an experimental study, allowed to test whether collective cheating varied as a function of the duration of cooperation.

## Overview and Hypotheses

In the pilot study, participants were asked to perform a task where cheating was possible, in dyads (positive goal/outcome interdependence), in a context of intergroup competition. We then invited participants to report the degree of ingroup cooperation and work satisfaction in relation to the task they performed.

We hypothesized that collective cheating behaviour would be positivity associated with the level of perceived ingroup cooperation: A higher level of cooperation should be perceived as the extent of collective cheating is greater (H1). We also formulated a corollary hypothesis, relating to the satisfaction expressed about the collaborative work performed. We expected that collective cheating behaviour would positively predict the level of satisfaction with the work done in relation to the task: A higher level of satisfaction should be expressed as the extent of collective cheating is greater (H2). Indeed, previous research has shown that cheating groups declared that they have cooperated and that they were satisfied about the (dishonest) work done (Zanetti & Butera, 2022).

In the main experiment, we manipulated group members' engagement in cooperation with the same group—either one-shot or repeatedly (group continuity), in order to experimentally test the impact of cooperation on collective cheating. The participants, in groups, were asked to complete four tasks, in a context of inter-group competition as in the pilot study. In a first condition (cooperation with group continuity) the group members remained in the same group, through all the tasks. In a second condition (cooperation for one

round), the group composition constantly varied across tasks. The aim of the main experiment was to test the impact of the history of cooperation of the group (long-term vs. for one round) on collective cheating. Consistently with the literature on group processes, with this manipulation we did not only effectively manipulate the history of cooperation, but by announcing cooperation for four rounds (vs. one round), we enabled group members to create a representation of the group in terms of entitativity, to anticipate the continuity of the group, which can have an impact on cheating from the beginning. We expected that collective cheating would increase if the group cooperated over time, compared to groups with members working together on a one-off basis (H3). As in the pilot study, we also expected that higher levels of cooperation (H1) and satisfaction (H2) would be expressed as the extent of collective cheating was greater.

For each study, sensitivity analyses, data exclusions, and all manipulations and measures are reported in the method sections of this manuscript and in the Supplementary Materials. The data, syntax, and materials for the two studies are available at https://osf.io/64rbx/?view_only=b41135e2ab024ec9ac180cc20ec24391.

## Pilot Study

### Method

#### *Participants*

We recruited 210 undergraduate students attending a psychology program in a medium-size French-speaking Swiss University during a methodology course. They participated in exchange of course credit. The sample consisted of 80.5% female students, with a mean age of 20.58 ($SD$ = 3.24). All students participated in the experiment at the same time and 105 dyads were formed. Regarding the composition of the groups, 10 were all male, 144 were all female and 56 were mixed dyads. Given the large number of participants, groups were distributed in four rooms ($N_{room1}$ = 60, $N_{room2}$ = 40, $N_{room3}$ = 64, $N_{room4}$ = 46). A sensitivity

analysis (G*Power; two-tailed, $\alpha = .05$, Power = .08) showed that the final sample allowed to detect an effect size of $f^2 = .04$.

Following their online registration, an email was sent to each participant specifying in which room they should go for the experiment. Five experimenters were involved: one experimenter per room to conduct the experiment and one fifth experimenter to manage the whole organization.

***Procedure***

The study was presented as a study aiming to explore the relation between teamwork and performance. A cover story was used to recreate a competitive environment which has been shown to trigger both individual (e.g., Murdock & Anderman, 2006) and collective cheating (e.g., Pulfrey et al., 2018). Indeed, the literature shows that people do not always cheat; if they can avoid it, they do not cheat (e.g., Mazar et al., 2008). The day of the experiment, upon arrival, in each of the four room, participants were asked to sit with another person in order to form a dyad. Each table offered two seats and the right number of places was prepared before their arrival. When all participants were seated, they were invited to read and sign a consent form specifying the voluntary nature of the participation and the anonymity of the data. The four experimenters started the experiment by following a written procedure, standardized for the four rooms. The study started with some demographic information and a question on how well participants knew the other member of the dyad, and then moved on to a collective problem-solving task; finally, participants filled in an individual questionnaire, composed of several measures (below).

During the collective problem-solving task, dyads had eight minutes at their disposal to complete the task (see below). In order to increase the importance of what they were playing for, a climate of competition among groups was induced, by mentioning a (fictitious) ranking based on dyad performance which would have been communicated in the days to

follow. A group number was assigned to each participant (the same for both members of the dyad) to be able to identify, anonymously, one's group in the ranking. No monetary incentive or any other manipulations were introduced. At the end of the entire procedure, each dyad was invited to put all the material in an envelope and give it to the experimenter present in the room before leaving. After the experiment, the students received a written debriefing by e-mail. Swiss law does not require ethical approval for studies involving non-vulnerable adults, if no biological samples are collected; thus, this study was not presented to the ethical commission of our university.

### *Measure at the Group Level*

**Extent of Collective Cheating.** To measure collective cheating behaviour, we employed the same measure as in Pulfrey et al. (2018; see Pulfrey & Butera, 2013, for its use in the study of individual cheating). Participants were to draw eight geometric figures, each presented on a booklet page. The instructions required them to complete each drawing with a single line, without lifting the pencil and without drawing twice on the same line. Importantly, only four of the eight exercises are solvable without lifting the pencil or draw twice the same line. We considered that collective cheating occurred when the dyad reproduced one of the unsolvable figures and/or declared (in a final sheet asking what exercises they solved) to have drawn one of the unsolvable problems. We also counted solvable problems that were clearly cheated, for example where the drawing had non-continuous lines (i.e., when the pencil has been clearly lifted in violation of the instructions). For the analyses, we computed a score reflecting the extent of collective cheating, namely the number of problems on which the group cheated.

### *Measures at the Individual Level*

**Sociodemographic Information.** Participants were invited to report their date of birth, gender, and some study information (faculty, year).

**Perceived Cooperation.** To measure the individual perception of cooperation with the other member after the dyadic task, we employed three of the five items used in Buchs (2002). Participants were asked to report their perception of “cooperation”, “quality of the relation in the dyad” and “collaboration in the dyad”. Ratings were made on 7-point scales ranging from 1 (very low) to 7 (very high). The Cronbach's alpha for the three items was .86, and they were therefore averaged in a single score.

**Satisfaction with the Work Done.** A measure of satisfaction with the work done during the collective task done was also introduced. Participants were invited to express their satisfaction via three items developed for this experiment. The items were “We did a good job", "We are satisfied with our work" and "We did a good score". Ratings were made on 7-point scales ranging from 1 (very low) to 7 (very high). The Cronbach's alpha for the three items was .84, and they were therefore averaged in a single score.

*Note.* For the sake of full disclosure, it should be noted that the questionnaire also included the following measures for exploratory purposes: familiarity between members, competition (Buchs, 2002), social identity (Ellemers et al., 1999), feeling of bonding (Bastian et al., 2014), performance-approach goals (Elliot & Murayama, 2008) and inclusion of other (Aron et al., 1992), see complete materials on OSF. Given the lack of significant results for our variables of interest, these measures are not included in the present manuscript. An interested reader may contact the authors.

**Results**

Descriptive analyses showed that 18.1% (19 dyads) of dyads cheated in the present experiment. Of the 19 dyads who cheated, 10 dyads (i.e., 52,6%) cheated only on one problem.

***Hypotheses Testing***

Preliminary analyses showed no effect of age and gender on cooperation and satisfaction. These variables were therefore dropped from the main analyses.

We hypothesized that a greater level of cooperation would be perceived as the extent of cheating was greater (H1). Given the setting of the experiment, namely participants working in dyads (nested data), we first tested the independence of the observations, and calculated the intra-class correlation (ICC for perceived cooperation). As displayed in Table 1, the null model showed a significant proportion of variance at the group level (ICC = 67%). ICC greater than 5% is conventionally regarded as a non-negligible amount of non-independence (Heck et al., 2010, for a discussion), and multilevel models were therefore used for the analysis using individual answers.

In order to test the association between the extent of cheating and the perceived cooperation, the cheating score of each dyad (extent of cheating) was thus attributed to each of the two members of the dyad. As displayed in Table 1, in Model 1, aiming to test H1, we included the extent of collective cheating in the regression. As expected, the extent of cheating was positively associated with the perceived ingroup cooperation ($B$ = 0.19, $SE$ = 0.09, $p$ = .043). The more dyads cheated, the greater they perceived ingroup cooperation.

We hypothesized that collective cheating behaviour would be positively associated with the level of satisfaction with the work done. We expected a greater level of expressed satisfaction as its extent was greater (H2). Again, given the nested structure of our data, the ICC was calculated for satisfaction with the work done. The null model showed a significant proportion of variance at the group level (ICC = 57.3%), supporting the use of multilevel models in our analysis.

As displayed in Table 1, Model 2, aiming to test H2, we included the extent of collective cheating in the regression. As expected, we found that the extent of cheating was

positively associated with satisfaction ($B = 0.27$, $SE = 0.10$, $p = .038$): The more dyads cheated, the more they declared to be satisfied with the work collectively done.

**Table 1**

*Multilevel Models of the Relation of Collective Cheating with Perceived Cooperation and Satisfaction*

| | Perceived Cooperation | | Satisfaction | |
|---|---|---|---|---|
| | Null model | Model 1 (H1) | Null model | Model 2 (H2) |
| Intercept | 5.53*** (0.11) | 5.45*** (0.11) | 4.18*** (0.11) | 4.07*** (0.11) |
| Extent of cheating | | 0.19* (0.09) | | 0.27* (0.10) |
| Variance (Intercept) | 0.99*** (0.17) | 0.94*** (0.17) | 0.93*** (0.18) | 0.79*** (0.17) |
| Variance (Residual) | 0.49*** (0.07) | 0.49** (0.07) | 0.69*** (0.10) | 0.69*** (0.10) |
| ICC | 0.67 | | 0.57 | |
| -2 Log Likelihood | 611.84 | 607.75 | 647.39 | 637.34 |
| AIC | 617.84 | 617.75 | 653.39 | 647.34 |

*Note.* *** $p < .001$; ** $p < .01$; * $p < .05$

**Discussion**

The results of the pilot study revealed that, concerning the measure of perceived cooperation, the extent of collective cheating (i.e., the amount of the cheating) was positively associated to the expressed cooperation. The more participants cheated, the more they reported high levels of ingroup cooperation.

For the satisfaction with the work done, the same pattern was found. The extent of cheating was positively related to the reported satisfaction with their work. The more participants cheated, the more they declared to be satisfied with the work they did together.

In conclusion, this pilot study has shown that collective cheating is associated with greater perceived cooperation, as well as greater satisfaction with the work done by the group. We can note an interesting convergence in these two results. Indeed, satisfaction with the work done can be understood as group processing, namely the group review and reflection of

the work performed, an essential element in cooperation and cooperative learning (Johnson & Johnson, 2009). This result provides quantitative evidence to the observation made by Zanetti and Butera (2022) in interviews: Cheating groups perceive themselves as cooperative groups and are happy with the work accomplished together.

The pilot study documented an association between cheating in groups (here dyads) and perceived cooperation. In the main experiment of this research, we directly and experimentally test the role of cooperation in collective cheating: We expected that collective cheating would be greater (in terms of extent) when cooperation lasted several rounds (group continuity), compared to groups where cooperation only lasted one round (H3).

## Main Experiment

### Method

#### *Participants*

In this experiment, we recruited 161 participants. All participants were graduate or undergraduate students from two Swiss Universities and a Swiss Hospitality Business School. Participation was voluntary. The majority of participants were part of classes in which the professor allowed the experimenters to present the study, and students chose to participate or not. For a small minority ($N = 18$), the system was the same as in the pilot study: Students were recruited during a methodology course and participated for course credit. Preliminary analyses revealed that removing these participants did not produce different results, and we decided to keep them in the sample. The sample was equally distributed across gender, with 47.2 % of females, with a mean age of 23.47 years old ($SD = 5.21$). Nationalities were varied, with the highest percentage for Switzerland (27.9 %) and France (16.8 %). The experiment was conducted in both French and English, depending on the school where it was conducted.

According to a sensitivity analysis (G*Power; regression; $\alpha = .05$, Power = .08) on individual measures (cooperation and satisfaction, H1 and H2), the final sample allowed to detect an effect size of $f^2 = .05$.[13]

***Procedure***

For the same reasons as in the pilot study, i.e., recreate a competitive environment favourable to cheating, we used a cover story and introduced the present experiment as aiming to explore the relation between teamwork and performance. We invited participants to take part in a practical exercise, defined as a contest between groups; participants then read and signed the consent form. We divided the class in two groups justifying this process with the fact that we were interested in different group processes involved in teamwork. Half of the participants moved to another room, and we explained participants that to guarantee anonymity, we gave them a label (with a number or a letter, see below for more details) to be sticked in a visible way. As in the pilot study, the experimenter followed a written procedure, standardized for both rooms. Participants were invited to work in groups of three (more rarely of two) to perform as well as possible four tasks, presented as requiring different skills: logical skills, mathematical skills, speed and precision, and luck—that we declared to be important competences in front of the participants. The four tasks were presented as a contest, each group being in competition for each task. The group performance was a function of the points collected for each task (more points = better performance). As in the previous

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[13] We should have also conducted a sensitivity analysis for the variable extent of cheating considering all tasks (H3). However, given the design used and the complex measures (see below), it was not possible. Instead, we ran a sensitivity analysis only on one task for H3 (on task/group data). According to this analysis (G*Power; t-test, two-tailed, $\alpha = .05$, Power = .08), the final sample allowed to detect an effect size of $d = .75$. This analysis is however not representative (see limitations).

experiment, we mentioned that groups would be ranked based on the group's performance (for each task), which would be exhibited in the classroom on the following days. To recognise their own group performance, participants should use the labels (number/letter) we gave them beforehand. No monetary incentive or other reward were introduced. The four tasks were named as following: logical skills, the game of luck, math skills, and the speed game (see the method section for tasks' details).

Groups had 5 minutes to complete each task, a time that appeared to be short for the proposed work according to pilot trials. The experimenter had a timer and announced when to start and when to finish each task, for the four rounds. For each task, groups received written instructions (the same as the oral instructions), the worksheets and a results sheet. When time was over, groups was invited to report the group's result—for each task—on the results sheet, where they also had to write down their labels to identify their group in the (fictitious) ranking. We then invited the group to put the results sheets in a cardboard box for collecting and disposing of the worksheets in the paper bin for recycling (these papers will in fact be retrieved at the end of the experiment as explained later). At the end of each task, and before starting a new one, we asked participants to answer, individually, questions about group dynamics during the task they had just completed. This procedure was the same for all four tasks, for all four rounds. At the end of the four rounds, participants were thoroughly debriefed. For the present experiment we applied for ethical approval. Although Swiss law does not require it, the present experiment was approved by the Research Ethics Commission of the authors' University (approval no. E_SSP_012020_00002) before starting the data collection.

***Independent Variable***

In order to manipulate the independent variable, we were inspired by studies on public goods games comparing fixed and random partners (e.g., Andreoni, 1988), and the

experimental study of Abbink (2004) on staff rotation and corruption. Thus, in the first condition, the cooperation with group continuity condition, the group composition remained the same across the four tasks. In this condition, participants were randomly assigned to a group of three (sometimes two), via the labels that mentioned the group number, and stayed in the same group with the same members across all four rounds (see Table 2 for groups' rotation in this condition). Concretely, three labels with the number one were distributed in the class, three labels with the number two and so on, in order to form the different groups.

**Table 2**

*Groups' Rotation across Rounds in the Cooperation with Group Continuity Condition*

| | Round 1 | Round 2 | Round 3 | Round 4 |
|---|---|---|---|---|
| Logical Skills | Group 1 | Group 4 | Group 3 | Group 2 |
| The Game of Luck | Group 2 | Group 1 | Group 4 | Group 3 |
| Math Skills | Group 3 | Group 2 | Group 1 | Group 4 |
| The Speed Game | Group 4 | Group 3 | Group 2 | Group 1 |

In the second condition, the cooperation for one round condition, group composition was not fixed but was changed with each round. As shown in Table 3, we created a rotation schedule that allowed each participant to complete each of the four tasks, but only once (for a single task/round) with the same partners. The letters in Table 3 correspond to the labels distributed to the participants (labels with letters) at the beginning of the experiment. Unlike the previous condition, where the same number was given to 3 participants, in this condition, one letter corresponded to one person throughout the rounds. For instance, participant A worked with participants B and C on the Logical Skills task in round 1, then worked with participants H and S on the Game of Luck task in round 2, and so on.

**Table 3**

*Participants' Rotation across Rounds in the Cooperation for One Round Condition*

| | Round 1 | Round 2 | Round 3 | Round 4 |
|---|---|---|---|---|
| Logical Skills | A | D | F | S |
| | B | G | H | E |
| | C | Y | L | I |
| The Game of Luck | D | A | Y | L |
| | E | H | I | G |
| | F | S | B | C |
| Math Skills | G | B | S | Y |
| | H | E | D | F |
| | I | L | C | A |
| The Speed Game | Y | C | E | B |
| | S | F | G | D |
| | L | I | A | H |

*Note.* In the same data collection, the same letter always corresponds to the same person.

Tables 2 and 3 provide the example of a distribution with a total of 24 participants, distributed in the two experimental conditions, 12 each. When there were more or fewer participants, depending on the data collection, we adapted either by making changes to the groups (2 participants instead of three), by eliminating one group or by increasing the workstations present (two workstations with the 4 tasks in the same room for instance). All possibilities in terms of the number of participants were thought out in advance so as not to hinder the course of the experiment.

***Measures at the Task Level***

Participants had to complete four separate tasks as a group. For each task, it was possible to measure *collective cheating* as follows: Once the worksheets were retrieved from the recycling bin, we were able to find the participants (group number or set of letters) who had worked on a particular sheet, and thus check the veracity and accuracy of the results

reported on the results sheet. This was possible because on each worksheet there were clues (letter or word in italics) that allowed us to assign the worksheet to a specific workgroup, in both conditions. In the cooperation with group continuity condition, to give the example of Group 1, the word "over" was italicised in all previously prepared worksheets for this group. In the cooperation for one round condition, the letters “a, b and c” were italicised in the text for the logical skills task in round 1 (see Table 3 for participants’ rotation).

**Logical Skills.** This task was the same as in the pilot study (Pulfrey & Butera, 2013; Pulfrey et al., 2018). Groups had to draw eight figures (geometrical shapes) with a single line, without lifting the pencil and without drawing twice on the same line. In this task, it was possible to skip a figure and come back afterwards. Half of the figures were solvable by following the instructions, the other half were not. As in the pilot study, we considered that collective cheating occurred when the group reproduced the figure in the space reserved for successful answers and/or declared (in a final sheet asking what exercises they solved) to have solved at least one of the unsolvable problems. We also coded as collective cheating alternative strategies (e.g., extra lines) or solvable problems that were clearly cheated. As for the pilot study, we computed the score reflecting the extent of collective cheating (number of cheated figures).

**The Game of Luck.** In this task, groups had to draw 15 cards from a box where we had put several cards and shredded paper. After each draw, participants were asked to return the card in the box and note the drawn card in the tables provided for this purpose to find the corresponding points. After drawing a total of 15 cards, they were invited to select together the four cards (of the 15 drawn) that give the group the most points.

The peculiarity of this task was that some cards were missing and therefore could not be drawn by the group. The missing cards were 9s (= 9 points), 10s (= 10 points), queens (= 12 points) and kings (= 13 points). We coded collective cheating when people noted that they

had drawn non-existent cards (and the corresponding points). We computed the extent of collective cheating (cheated points).

**Math Skills.** For this task we employed 16 matrices out of the 20 used in the original paper of Mazar et al., 2008 and its replication (Verschuere et al., 2018). Groups had to find a set of numbers which added up to exactly 10. If the right set of numbers was found, participants were asked to check a “Got it” box. In this task, it was possible to skip a matrix and come back afterwards. Not all matrices were solvable (no numbers that added up to exactly 10). We coded collective cheating when groups declared unsolvable matrices as solved, when they declared a matrix as solved but did not find a pair, or the pair found was incorrect. We computed the extent of collective cheating (number of cheated matrices).

**The Speed Game.** We developed a task inspired by the one used in Bäker and Mechtel (2019). We created 10 matrices with a placeholder text, Lorem ipsum…, and we added, five time, a double “p” in the text. All matrices contained five "pp". The special feature of this task was that participants could move to the next matrix only if the five "pp" were found in the current matrix. We coded collective cheating when participants reported they solved a matrix where they did not find the 5 "pp". Given the clear instruction to proceed only when the current matrix was solved, we counted as cheating also those matrices solved correctly but following an unsolved matrix (whether or not the latter was declared as solved). We computed the extent of collective cheating (number of cheated matrices).

***Measures at the Individual Level***

**Extent of Cheating (individual).** From the extent of cheating scores for each task, which correspond to group level analysis, we created a score at the individual level: For each participant, we reported the extent of cheating in terms of points cheated (e.g., matrices), summing all the points across all the four tasks.

**Perceived Cooperation.** The same three items used in the pilot study were employed. Again, ratings were made on 7-point scales ranging from 1 (very low) to 7 (very high). For each task, Cronbach's alpha was calculated and is shown in Table 4. The three items were averaged for the analysis.

**Satisfaction with the Work Done.** To measure the individual satisfaction with the work done, we employed the same three items as the pilot study. Again, ratings were made on 7-point scales ranging from 1 (very low) to 7 (very high). For each task, Cronbach's alpha was calculated and is shown in Table 4. The mean of the three items was used.

**Sociodemographic Information.** Participants were asked to indicate their date of birth, nationality, gender, highest degree obtained and current occupation.

**Table 4**

*Cronbach's Alpha, Mean and Standard Deviation for Perceived Cooperation and Satisfaction across Tasks*

| | Perceived Cooperation | | | | Satisfaction | | | |
|---|---|---|---|---|---|---|---|---|
| Tasks | *N* | α | *M* | *SD* | *N* | α | *M* | *SD* |
| Logical Skills | 157 | .92 | 6.00 | 1.02 | 158 | .91 | 4.91 | 1.52 |
| The Game of Luck | 160 | .93 | 6.15 | 2.09 | 160 | .80 | 5.90 | 0.99 |
| Math Skills | 160 | .95 | 5.68 | 1.27 | 161 | .94 | 4.29 | 1.68 |
| The Speed Game | 157 | .93 | 6.20 | 0.97 | 158 | .90 | 4.43 | 1.57 |

**Results**

To summarise the structure of the data, 161 participants took part in this experiment and worked in groups of two or three people. Each participant performed four tasks (four rounds) either with the same people or with different people for each round. This experimental design does not allow the number of groups in this experiment to be used as the unit of analysis. For this reason, when analysing collective cheating we are focusing on the

tasks completed throughout the experiment. Moreover, the number of groups is not simply the number of individuals divided by a fixed number of members per group, given that groups can consist of sometimes two and sometimes three members, which may change from one round to the other in the one round conditions. For a detailed account of group composition for each task, see the MainExp_Group_data database on https://osf.io/64rbx/?view_only=b41135e2ab024ec9ac180cc20ec24391.

Taking into account all the tasks, participants cheated on 15.9% of tasks (37 out of 232). Among the 37, 22 tasks (i.e., 59.5%) were cheated only on 1 problem. In particular, we found that logical skills task was cheated 6 times (out of 58), the math skills task 13 times (out of 57) and the speed game task 18 (out of 58). The game of luck task was never cheated.

***Hypotheses Testing***

**Group Data.** In preliminary analyses, no effect of composition in terms of gender, language or number of members (two or three) was found. These variables were therefore not considered in the following analyses.

To test the hypothesis that cooperation during four rounds (cooperation with group continuity) leads to a greater extent of collective cheating that cooperation for one round (H3), a two-sample T-test was performed. It is important to note that the following result was calculated on the 232 tasks (not on groups given the particular design of this experiment). Since the Levene's test for heterogeneity of variances was significant, $F = 18.01$, $p < .001$, indicating unequal variances, results of the Welch's T-test were considered. Tasks in the cooperation with group continuity condition were significantly cheated to a greater extent ($M = 0.53$, $SD = 1.57$) compared to tasks in the cooperation for one round condition ($M = 0.17$, $SD = 0.50$), Welch's $t(144.413) = 2.35$, $p = .02$, $d = 0.30$.

**Individual Data.** This section provides results on cooperation and satisfaction that participants experienced in a global way, throughout the whole experiment. The following

analyses are therefore made on an average cooperation (the average of the cooperation perceived across the four tasks) and satisfaction score (the average of the satisfaction reported across four tasks). We are aware that in these collective settings the (individual) observations are not independent. However, given the complex experimental design employed in terms of group composition and member rotation in the cooperation for one round condition (see Method for details), at this stage of the analyses we cannot take the group into account as we did for the pilot study. The next analyses are therefore done at the individual level. An interested reader can find in Supplementary Material A (Tables S1 and S2) the details of the multilevel models, for cooperation and satisfaction, for each of the four tasks, allowing to consider the non-independence of observations.

Preliminary analyses showed no influence of gender either on cooperation or on satisfaction. Gender was dropped from the main analysis. Age had no impact on satisfaction but was a significant predictor of cooperation, $b = 0.04$, $t(151) = 2.90$, $p = .004$, $R^2 = .05$. Thus, age was only considered for the analysis on cooperation.

***Perceived Cooperation.*** Participants expressed their perception of ingroup cooperation for each of the four tasks. We computed the mean of cooperation that participants expressed during the four tasks in order to test, at the individual level, the impact of the extent of collective cheating (H1) on the global perception of cooperation across tasks. We performed a simple linear regression to test the impact of the extent of cheating on the perception of cooperation, controlling for age. The overall regression was significant, $F(2, 149) = 4.21$, $p = .017$, $R^2 = .05$. The extent of collective cheating did not predict the perception of cooperation, $b = 0.01$, $t(151) = 0.29$, $p = .78$. Age was found to predict cooperation $b = 0.04$, $t(151) = 2.87$, $p = .005$.

***Satisfaction.*** Participants expressed their satisfaction with the work done for each of the four tasks. We computed the mean of the satisfaction expressed during the four tasks to

test, at the individual level, the impact of the extent of collective cheating (H2) on global satisfaction across tasks. A simple linear regression was used to test the impact of the extent of cheating on the overall satisfaction with the work done. The overall regression was significant, $F(1, 159) = 8.74$, $p = .004$, $R^2 = .05$. The extent of collective cheating predicted the satisfaction, $b = 0.10$, $t(160) = 2.96$, $p = .004$; this relationship exists especially for the Logical Skills task (see Supplementary Material A for multilevel analysis for each task).

**Discussion**

The results of the main experiment support the key role of cooperation in collective cheating experiences. Indeed, cooperation extended over time and its anticipation, namely cooperation with group continuity, has been found to elicit a greater extent of collective cheating than cooperation for one round only. The fact that people worked—or anticipated to work—together over time was therefore an antecedent of collective cheating. Concerning perceived ingroup cooperation and satisfaction, the main experiment revealed a positive impact of extent of collective cheating on expressed satisfaction with the work done as in pilot study but, unlike the latter, no impact on perceived cooperation was found.

Interestingly, only one task was not cheated: the game of luck. What was different about this task, compared to the other three, is that it did not involve real skills but depended on luck. The literature has shown how important it is to feel competent (e.g., Ryan & Deci, 2000b), and to maintain a self-image as a competent person, even when cheating at school (Zanetti & Butera, 2022). The fact that the performance on this task was not threatening to the competence of the individuals, as it was a matter of luck, might have been decisive in the choice not to cheat. In this regard, however, it is important to note that in the study of dishonesty in both forms—individual and collective—, dice-rolling tasks are paradigms often used (e.g., based on Fischbacher & Föllmi-Heusi, 2013). Also in these cases, as in our game of luck activity, these tasks may be less threatening to the self, not involving skills; but

dishonesty is often found. A main difference to highlight is that, unlike our experiment, in the vast majority of cases, financial benefits were introduced (e.g., Weisel & Shalvi, 2015) and people cheated for a monetary reason.

## General Discussion

A great deal of work has argued that cooperation appears to be at the root of collective cheating. We devised the present study to provide an experimental test of such conjecture. The pilot study revealed that, in a competitive setting (without financial incentive), the greater the participants' extent of collective cheating, the higher their perception of ingroup cooperation was, and the more they were satisfied with the work they did as a group. The pilot study thus revealed an association between cheating in groups and perceiving these groups as cooperative, and a source of satisfaction.

The main experiment was devised to provide an experimental test of the role of cooperation in collective cheating. In order to vary the duration of and engagement in cooperation with a group, we manipulated the history of cooperation of the group (long-term vs. for one round) in a competitive environment, again without financial incentives. Participants worked in groups on four tasks, either in the same group for the four tasks (group continuity) or in a different group for each of the four tasks. The results revealed that the tasks performed by the groups in the cooperation with group continuity condition, namely long-term cooperation, were cheated to a greater extent than those in the cooperation for one round condition. Moreover, as in the pilot study, the greater the extent of collective cheating, the more they expressed satisfaction with the work they did collectively. However, in the main experiment, we did not find this pattern for the perceived cooperation measure, unlike in the pilot study.

## Contributions

### *Theoretical and Methodological Contributions*

Until now, when exploring cooperation, the literature on collective dishonesty mainly focused on specific behaviours such as corruption, involving specific dynamics of bribing (e.g., Abbink, 2004), or one-off cooperation (e.g., Pulfrey et al., 2018; Soraperra et al., 2017). Little was known about the mechanisms involved in ingroup cooperation underlying collective cheating, explaining whether and how cooperation could influence collective cheating. For the first time to our knowledge, the present research empirically investigated the history of cooperation on collective dishonesty, understood as dishonesty of a group of interdependent peers. Investigating the impact of cooperation by manipulating its temporal dimension, we made an important theoretical distinction in terms of history of cooperation, rarely seen in the experimental field: The difference between one-time cooperation and cooperation over time. The hypothesis that cooperation has an impact on collective cheating was supported by the result that history of cooperation has an impact: When working together over time, group cheated to a greater extent than groups working together one time. Not only does the results of the present studies provide experimental support for the conjecture that cooperation between group members plays in collective cheating experiences, but it allows to qualify this conjecture by showing that it is mainly the history of cooperation, namely cooperation over time, which predicted the extent of collective cheating.

Moreover, contrary to what is customary in the study of collective dishonesty (e.g., Conrads et al., 2013; Gross et al., 2018; Korbel, 2017; Soraperra et al., 2017; Weisel & Shalvi, 2015) no financial stakes were involved in our studies. We found that mere inter-group competition drove a sizeable proportion of groups to cheat. Additional evidence of the role of ingroup processes in collective cheating is that individuals who cheated to a greater

extent (in the group continuity condition) reported higher levels of ingroup cooperation, as well as satisfaction, than individuals who cheated less in the one-off cooperation condition.

In addition to the contribution to the literature per se, the main experiment could also contribute in a methodological way, at the level of the experimental paradigm. In the literature on collective dishonesty, most experimental studies employed simultaneous or sequential decision structures (e.g., Thielmann et al., 2021; Weisel & Shalvi, 2015). In our studies, we let the group members make a common and collective decision, within a joint decision structure, which reflects typical situations in real environments and work groups, in professional or school contexts. In particular, as mentioned earlier, in the literature on collective cheating, experimental studies are often based on die-roll paradigms (e.g., Fischbacher & Föllmi-Heusi, 2013). We proposed a different experimental setting that combines several tasks—involving various skills—to be performed, in groups, in an inter-group contest. Moreover, we have also introduced an original experimental manipulation that allows participants to rotate, or not, in groups, thereby varying the history of cooperation in groups (cooperation with group continuity vs. cooperation for one round). The complexity of this experimental paradigm, in particular the cooperation for one round condition, is high, but we think that this procedure may help other researchers study longer-term group processes occurring during collective cheating.

**Limitations**

Some limitations of the present studies are to be mentioned. The complex design of the main experiment allowed us to study an important phenomenon underlying collective cheating: The impact of the history of cooperation. However, with a design like the one we used, it was difficult to perform a prior power or sensitivity analysis taking into account all the tasks. Moreover, in our studies, we did not consider motivations and other group processes (e.g., social identity, trust) as potential mediators of collective cheating, as they

unfold during history of cooperation and determine the extent of collective cheating. Although in the pilot study we did not find significant results on measures of social identity and goals as outcomes of collective cheating, it would have been more appropriate to study these dimensions with behavioural measures, such as observation of signs of cohesion and trust.

## Conclusions

We experimentally tested the impact of cooperation on the extent to which groups engage in collective cheating by manipulating the history of group cooperation. We found that participants cheated to a greater extent when they were with the same group members for a longer period, on multiple tasks, compared to participants who rotated across different groups. Although appreciated for its benefits, cooperation has a dark side, which seems to be leading group members to collaborate in a dishonest way for the sake of the group's performance.

# CHAPTER 5:

## Detecting Collective Cheating Culture in Academic Contexts

**Abstract**

Collective cheating is a widespread phenomenon, especially in school and academic contexts. A large majority of students report having cheated at school, and this is also done collectively, with one or more people. The literature highlighted the impact that contextual factors and norms could have on collective cheating, in terms of decision to cheat and its justification and acceptance. Indeed, in many settings, cheating in groups is part of a culture and reveals a descriptive norm. Despite the omnipresence of collective cheating, no measure exists, to our knowledge, that captures the presence of a collective cheating culture, especially in a school or academic environment. The aim of the present research was therefore to develop and validate an instrument that could account for the existence and extent of a collective cheating culture that may constitute a descriptive norm that translates the acceptance of this form of dishonesty. Study 1 was planned to develop the Culture of Collective Cheating Scale (CCCS) in its final form. The validity of the CCCS scale was then tested in Studies 2 and 3. Study 2 evaluated the construct validity and Study 3 the convergent and predictive validity of the new measure.

*Keywords:* collective cheating; academic misconduct; scale development; cheating culture; descriptive norms

*Note.* The present paper has been submitted for publication as: Zanetti, C. & Butera, F. (2023). Detecting collective cheating culture in academic contexts. *Manuscript submitted for publication*.

## Detecting Collective Cheating Culture in Academic Contexts

"About 300 people have been arrested in the Indian state of Bihar, authorities say, after reports emerged of blatant cheating in school exams. Parents and friends of students were photographed climbing school walls to pass on answers. Many of those arrested were parents. At least 750 students have been expelled." (BBC, 2015). This seemingly improbable piece of news highlights the extent to which cheating could be in fact collective in nature. This example is indeed one of many scandals that have come to light in recent years in various fields, such as sports and work, and which have not spared the education sector. Indeed, a quick look of the news over the past few years reveals countless episodes where students have cheated as a group. Collective cheating episodes in the United States, at Harvard University (Pérez-Peña & Bidgood, 2012), in India (BBC, 2015) or in France (Ponlevé, 2022) are just some examples showing the frequency of the phenomenon, to the extent that it sometimes becomes commonplace, a norm, a culture. Collective cheating is thus a customary phenomenon of collective dishonesty, defined as breaking the rules with several people, in a group, for the benefit of the whole group or of one of its members.

In addition to documenting the existence and prevalence of this collective form of dishonesty, the literature in the field has also reported that individuals cheat more when they can do so in groups, rather than alone (e.g., Weisel & Shalvi, 2015). This, and the disastrous consequences that cheating can have on learning and education, speak to the importance of studying this behaviour, and exposing the environments in which it operates. Indeed, the literature has also highlighted the impact that context, such as norms and culture, has on the decision, maintenance and justification of dishonest behaviour (e.g., Zanetti & Butera, 2022).

In this regard, the first intended contribution of the present article is to provide a theoretical synthesis of the literature on the culture of collective cheating, pointing to research on contextual features that facilitate the emergence of such collective behaviour. Relatedly,

the present study aims at developing a scale that reveals the extent to which a culture of collective cheating is in place in a given academic environment. This methodological contribution leads to a further, application-oriented contribution: We provide an instrument that can be used in classrooms and schools in order to detect a culture of collective cheating.

## The Role of Context in Cheating Behaviour

Students are embedded in classrooms and schools, which are organized by norms and culture that depend on the norms and culture prevalent in a given society: Students' behaviours, including cheating, is thus affected by the norms and culture that surround them (Butera et al., 2021).

### *The Effect of Descriptive Norms*

An extensive literature showed that descriptive norms, i.e. what it is done by people in a certain context (e.g., Cialdini et al., 1991), often matter more than injunctive norms, i.e., what is prescribed (e.g., Keizer et al., 2008). The perception of an existing norm, of what peers are doing, has been shown to be crucial in the engagement in individual or collective behaviours, and this is also true for cheating. Indeed, the literature in the field of dishonesty has highlighted that peers' attitudes and behaviour regarding cheating—understood as the existing descriptive norm—has a key influence on individual or collective cheating behaviour (e.g., Gino et al., 2009; Innes & Mitra, 2013; Jones & Kavanagh, 1996; Jordan, 2001; McCabe & Trevino, 1997; McCabe et al., 2001; O'Rourke et al., 2010; Soraperra et al., 2017; Zanetti & Butera, 2022).

**Individual Cheating.** Reviews of collegiate and academic cheating have long documented the influence of others' behaviour (e.g., Crown & Spiller, 1998; Hutton, 2006; Murdock & Anderman, 2006). When students see other students cheating or believe that cheating is normal among classmates—their peers—, they are more inclined to do so themselves. For instance, the perception or the belief that other students cheat positively

predicted individual cheating (e.g., Awdry & Ives, 2021; McCabe & Trevino, 1997), and students' perception of peer disapproval was found to be a most effective negative predictor of cheating (e.g., McCabe & Trevino, 1997). Moreover, social norms, in terms of how friends and others viewed cheating or behaved dishonestly, has also been shown to be an important factor in planning to cheat (Genereux & McLeod, 1995). These findings appeared to be consistent with other studies showing that the exposure to rule violations influences the individual choice of behaving dishonesty (e.g., Soraperra et al., 2017).

**Collective Cheating.** When considering collective cheating, classmates' attitudes and behaviours also appeared to serve as normative support favouring cheating behaviour in groups and inhibiting its reporting (Zanetti & Butera, 2022). For example, the impact of being part of a group, such as sororities or fraternities, increased cheating within the group (e.g., Baird, 1980; Haines et al., 1986; McCabe & Trevino, 1997). In addition, other studies showed the importance of friends and family in the occurrence of collective cheating (e.g., Awdry & Ives, 2021; Bretag et al., 2019; Đogaš et al., 2014; Irlenbusch et al., 2020; Pulfrey et al., 2018). And the possibility to interact and exchange arguments in favour of dishonesty—leading to the development of a new (dishonest) norm—has been found as a mechanism involved in collective cheating experiences (Kocher et al., 2018).

Such a consistent literature has thus shown the role of descriptive norms in the choice to behave dishonestly, whether individually or collectively. For this reason, it is important to look at the contexts in which descriptive cheating norm emerge.

### *The Effect of Culture*

Another particularly relevant part of the literature is the one that has explored the relationship between contextual features and cheating behaviours from the perspective of culture, defined as "shared meaning systems that provide the standards for perceiving, believing, evaluating, communicating, and acting" (Benet-Martínez, 2008, p. 170).

On the one hand, the literature highlighted the importance of a culture of honesty on cheating attitudes and behaviours (e.g., McCabe et al., 1999): When morality, and consequently personal moral standards, were salient, cheating—both individual (e.g., Mazar et al., 2008, Experiments 1 and 2) and collective (e.g., Dunaiev & Khadjavi, 2021)—was reduced. For instance, on the impact of a culture oriented towards honesty and respect for social norms, Wormley and Cohen (2022) explored the impact of the local culture (the religiosity and cultural tightness of US states) on cheating in a widespread online word game. They found lower levels of cheating in states high in religiosity and cultural tightness, i.e., strong social norm and penalties for violations.

On the other hand, the literature has pinpointed the influence of the culture conveyed by the context, such as values, on (dis)honest or (un)ethical behaviours and decisions. Indeed, some authors have shown that the cultures that pressure their members to be competitive, to be the best, to succeed, facilitate the emergence of cheating behaviours (e.g., Castille & Fultz, 2018; Palazzo et al., 2012).

**Individual Cheating.** The salience of an honest culture, via for example the use of honour codes, has been shown to impact individual cheating: After signing a code of honour, students cheated less (e.g., McCabe & Trevino, 1993). In the same vein, the signature of an honesty statement appeared to reduce individual cheating (e.g., Dunaiev & Khadjavi, 2021).

Values, as a part of culture promoted by the context in which students are embedded, have been shown to predict both the acceptance of cheating and cheating behaviour (Pulfrey & Butera, 2013, 2016). Indeed, Pulfrey and Butera (2013) documented a positive relationship between adherence to self-enhancement values (values of achievement and power; Schwartz et al., 2012) and individual cheating (acceptance and behaviour). Likewise, Pulfrey and Butera (2016) found a negative relationship between adherence to self-transcendence values (values of universalism and benevolence; Schwartz et al., 2012) and the acceptance of

individual cheating. What is particularly interesting to note is that these relationships between values and cheating have been shown to be influenced by the values promoted by the surrounding culture in place. For example, promoting a culture of self-transcendence reduced the association between self-reported self-enhancement values and the acceptance of cheating (Pulfrey & Butera, 2013).

Genereux and McLeod (1995) found that a key factor of the increase of planned (vs. spontaneous) cheating was the contextual pressure that students felt. This pressure, related to grades, workload, or family view on grades, for instance, recalls the values of performance, success and achievement discussed earlier (Schwartz et al., 2012). The local culture, such as classroom structure, has also been shown to be an important element in cheating decisions, particularly depending on whether this classroom structure promotes mastery goals, i.e., the desire to understand and progress, or performance goals, i.e., the desire to perform and succeed. For instance, Murdock et al. (2004) showed that cheating was more accepted and rated as more likely by students in performance goal structures.

**Collective Cheating.** As for individual cheating, collective cheating has been shown to be decreased when the culture promoted honesty, for example via the signature of an honesty statement (Dunaiev & Khadjavi, 2021) or the reading of ethic codes (Bonfim & Silva, 2019). As Dunaiev and Khadjavi (2021) found, groups cheated less (in declaring a joint performance determining the payoff) when they had to sing an honesty statement at the beginning of the reporting (vs. no signature). Similarly, the reminder of moral standard through the reading of a code of ethics at the beginning of a task, reduced collective cheating (Bonfim & Silva, 2019).

Again, in terms of values as part of culture, Pulfrey et al. (2018) showed the effect of culture (experimental portrayal of a competitive vs. cooperative society by an alleged Nobel Economics Prize winner) on the association between (benevolence) values and (acceptance

of) collective cheating. When the culture was presented as competitive, benevolences values positively predicted a positive attitude toward collective cheating (the acceptance of collective cheating, Study 1).

## The Culture of Collective Cheating

The above-mentioned literature has pointed to the importance of context—in terms of descriptive norms and culture—in cheating behaviour, for both individual and collective cheating. Regarding the relationship between culture and norms, "Culture encompasses macrolevel processes and deals specifically with the values and norms that govern and organize a group of people, defining characteristics and behaviours that are deemed appropriate or inappropriate for an organized group" (Benet-Martínez, 2008, p. 172). As suggested, norms—especially injunctive norms (e.g., Cialdini et al., 1991)—are key component of culture. However, as discussed earlier, what people do is sometimes different from the prescribed norm. This descriptive norm, which derives directly from people's attitudes and behaviours, participates in turn to create the culture in place. Indeed, what people do in a given context will subsequently shape the existing culture, in a retroactive loop (e.g., Butera et al., 2021 for an example of competitive norms and culture in education).

Given the close relationship between culture and norms—i.e., norms could be provided and shaped by culture and could create the culture in place—from now on, we will use only one term to refer to the phenomenon with which the present research is concerned: *collective cheating culture*. We define collective cheating culture the extent to which cheating together is a common behaviour, a descriptive norm, embedded in a (local) culture that favours such behaviour.

The research reviewed above, and the pervasiveness of collective cheating, pointed to the need to develop and validate a measure assessing the culture of collective cheating in academic contexts. We believe that detecting settings where collective cheating is a culture

could be crucial in order to understand this behaviour and be able to implement relevant solutions to deal with collective dishonesty. In this endeavour, we focus on education. This choice was made because collective cheating, in many forms, is common in school and academic contexts (e.g., Awdry & Ives, 2021; Bretag et al., 2019; Ferguson et al., 2022; Zanetti & Butera, 2022). However, although this behaviour is common, there is no measure in the literature to assess a given local culture in relation to collective cheating. In general, the study of collective dishonesty is a relatively recent field, for which literature has been growing in recent years. More specifically, at the academic level, collective cheating has been seldom investigated compared to the study of individual dishonesty, with the first studies already starting in 1940 (e.g., Drake, 1941). The lack of instruments related to the measurement of the collective dishonesty, especially in terms of local culture, motivated this research, which aimed to fill this gap by proposing a scale measuring the culture of collective cheating in a given context.

## Overview and Hypotheses

In Study 1, we developed a new measure that we called the Culture of Collective Cheating Scale (CCCS). The choice of this name, in particular the emphasis on the word culture, was dictated by the fact that, even at the micro- or proximal level, i.e., in a group or a classroom, we can speak of the existence of a culture, as proposed by the culture-as-a-situated-cognition (CSC) theory (Oyserman, 2015). Indeed, as argued by the CSC theory, culture can be considered on three related levels: “At the highest level, culture is a human universal, a “good enough” solution to universal needs. At the intermediate level, culture is also a specific meaning-making framework, a “mindset” that influences what feels fluent, what is attended to, which goals or mental procedure is salient. At the most proximal level, culture is a set of particular practices within a specific society, time, and place” (Oyserman, 2015, p. 2). Cultures—at these different levels—have an influence on the system of thought

of group members and their behaviour (e.g., Butera et al., in press; Oyserman, 2015). Thus, according to these definitions, we can consider the presence of a (local or situated) culture of collective cheating, reflecting the way of being and relating according to the tradition of the group, such as a classroom. The development of the CCCS followed phases 1 and 2 of item and scale development suggested by Boateng et al. (2018): We generated a pool of items that we administered to participants in order to operate an item reduction and develop the definitive version of the CCCS.

Studies 2 and 3 were planned to evaluate the CCCS scale we developed (phase 3 of Boateng et al., 2018), in terms of construct validity (Study 2), and convergent and predictive validity (Study 3). In Study 2, we invited participants to fill in the CCCS after reading a vignette of a collective cheating event, in which we manipulated the presence vs. the absence of a culture of collective cheating. We expected that, if the CCCS is indeed a scale that captures a culture of collective cheating, participants would score higher on the CCCS when assessing the vignette that described cheating in presence (vs. absence) of a collective cheating culture (H1).

In Study 3, we tested the associations between the CCCS and some measures of moral disengagement strategies, i.e., a collection of cognitive mechanisms allowing to selectively (dis)engage one's own moral standards to deal with moral failure (Bandura, 1990). To give a common example of such mechanisms in school, we can mention attribution of blame, i.e., the mechanism whereby students blame the teacher for their dishonesty, viewing their action as a reactive and defensive one enabling students to excuse the behaviour through the attribution of incompetence, harshness or immorality to their teacher. Another example is minimization of consequences, whereby students convince themselves that cheating is acceptable as it does not harm anyone. Several studies showed a positive relationship between a culture of dishonesty and the activation of moral disengagement mechanisms. For example,

Shu et al. (2011, Study 3 and Study 4) found that participants in a permissive context who had the possibility to cheat, or who had not been exposed to an honour code—part of the local culture—, expressed higher level of moral disengagement. Thus, we predicted positive associations between the CCCS and moral disengagement measures. We expected that the more participants assess a collective cheating event with a higher score on the CCCS, the stronger the reported moral disengagement mechanisms would be (H2).

We also included measures of guilt and responsibility. Research showed that, when cheating collectively, people did not mention negative emotions such as guilt (Zanetti & Butera, 2022). Moreover, diffusion of responsibility, i.e., sharing responsibility for a wrongdoing with group members, is often discussed in collective cheating experiences as a mechanism of moral disengagement (e.g., Conrads et al., 2013; Feldman & Rosen, 1978; Mazar & Aggarwal, 2011; Rowan et al., 2022). Indeed, a reduction of both perceived responsibility and guilt has been found in collective cheating experiences (vs. individual cheating, Zanetti et al., 2023a). Thus, we expected that the more participants report a collective cheating culture when assessing a collective cheating event (higher CCCS score) the lower the responsibility (H3) and guilt (H4) scores would be.

Finally, Study 3 tested the predictive validity of the CCCS by predicting acceptance of collective cheating. Several studies have shown a positive association between attitudes toward cheating—such as its acceptance—and the real cheating behaviour (Jordan, 2001; Whitley, 1998). For this reason, even if acceptance of cheating is a self-reported measure, we can consider it as a proxy of collective cheating behaviour to assess the predictive validity of our scales. As the CCCS is supposed to measure collective cheating culture, we expected that the more participants report a collective cheating culture when assessing a collective cheating event (higher CCCS score), the higher the acceptance of collective cheating would be (H5).

For each study, data exclusions, all manipulations and measures are reported in the method sections of this manuscript and in the Supplementary Materials, as well as sensitivity analyses for Studies 2 and 3. The data, syntax, and materials for the three studies are available at https://osf.io/8j4gb/?view_only=18e231d57740484483d363f1bed49d00.

## Study 1

### Method (Survey Administration)

#### *Item Generation*

Scale items were developed based on the seven themes emerged in the qualitative study of Zanetti and Butera (2022), which draw a chronology of the collective cheating event. The themes were as follows 1) Reasons for collective cheating; 2) Birth of collective cheating; 3) Organisation of collective cheating; 4) Risk Management; 5) Concealment strategies; 6) Justifications and 7) Social impact of collective cheating. This qualitative study is the first that documented the phenomenology of the unfolding of collective cheating, from its beginning to the impact on the group. This rich overview of the collective cheating event was the reason why we chose this study as the basis for developing our scale. The seven themes were identified as factors for item generation (from now on, we will refer to them as factors). For each factor and respective sub-factor, we created a pool of items (see Table S1 in Supplementary Material A for all items, sub-factors and factors) reflecting the specific patterns, employing an inductive method (Boateng et al., 2018), i.e., creating items from testimonies of the participants in the above-mentioned qualitative study. In total, we developed 109 items, 12 items for factor 1 (e.g., “I cheated with others to improve my grade or get a good grade”), 9 items for factor 2 (e.g., “The cheating was decided in the group in a tacit way”), for factor 3 (e.g., “Cheating in this way was a routine”) and for factor 7 (e.g., “These events are fun memory to share”), 15 items for factor 4 (e.g., “We were careful to act strategically”), 18 items for factor 5 (e.g., “Reporting was simply improbable, never seen

before") and 37 items for factor 6 (e.g., "Everyone did it in my class, cheating was normal"). The items were created in French and then translated in English by one of the authors, the other author checked the correspondence between the French and the English version. The French version is available on request from the authors.

***Participants***

In this first study 334 participants were recruited a) during a methodology course of the psychology program of a mid-size French-speaking Swiss university, where students were asked to participate in several experiments for course credits, and b) via social networks (e.g., Facebook). From these participants, 273 answered "yes" to the question "Have you ever cheated collectively in a school/academic contexts". As the aim was to create a collective cheating culture scale based, for this first stage, on the responses of participants who had experienced such an event, we excluded from the sample participants who did not have an event of collective cheating to recall. The sample of participants who did not experience a collective cheating was too small for parallel analyses.

The final sample used in this first study consisted of 273 participants. Their average age was 21.95 years old (*SD* = 4.58), 83.20 % were Swiss and 77.30 % were women. Almost all participants were students or with some higher education.

***Procedure***

This study was presented with full disclosure of its actual goal, i.e., a study aimed to explore school and/or academic collective cheating behaviours. After participants signed the informed consent, we asked participants if they had ever cheated collectively in school and academic contexts, giving them a definition of the terms and some examples (e.g., sharing answers, deciding as a group to plagiarise, having work copied by/from others). If the participants' response was positive, we invited them to briefly describe the event, in written form, and then to answer the 109 items we generated in the previous phase.

### *Measures*

**Culture of Collective Cheating Scale (109 items).** As already mentioned, we created a pool of 109 items categorized into seven domains, understood as factors. The main version of the questionnaire—for participants who had experienced a collective cheating episode as protagonist ($N = 273$)—showed the 109 items grouped by the categories to which they belonged, following the chronological order proposed by Zanetti and Butera (2022). For each item, we asked participants to answer on a 6-point scale from 1 (*not at all*) to 6 (*totally*) how closely the item corresponded to their collective cheating experience (the one they described). An example of an item in the first domain (Reasons for collective cheating) was "I cheated with others to avoid a bad grade".

**Sociodemographic Information.** At the beginning of the questionnaire participants were asked about their gender, age, nationality, study or professional field and current occupation. Only age, gender and nationality were mandatory. Given the purpose of this study, the development of an instrument, these variables have not been considered in the study but simply provide information on our sample.

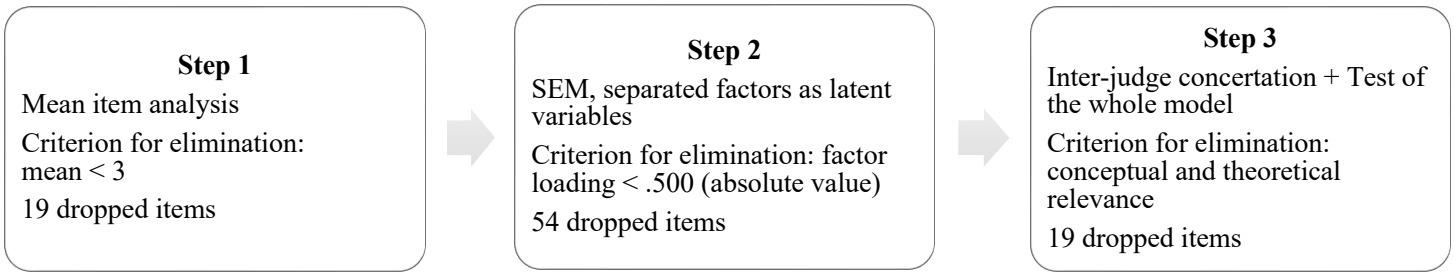
## Results

### *Item reduction*

The aim of the present research was to develop a measure of the culture of collective cheating, and followed the principle of parsimony (Boateng et al., 2018). For this reason, we proceeded to a reduction of the items in several steps summarised in Figure 1.

**Figure 1**

*Representation of the Different Stages of the Item Reduction Process that Led to the Final Structure of the Scale*




**Step 1.** As a first step, we analysed the means of all items (means and standard deviations for the 109 items are reported in Supplementary Material A). The scale aimed to measure the presence and strength of a culture of collective cheating and, as a reminder, participants rated the items on a scale of 1 to 6. We eliminated items with a mean equal to or below three (rather disagree), because a (mean) score below three corresponded to disagreement with the item. All factors considered, we eliminated 19 items in this process.

**Step 2.** As a second step of item reduction, we performed Structural Equation Models (SEM), where we analysed the relationship between each item and the factor to which it belonged a priori. To do this, we set each factor as latent variable in separated models, and we inspected each item factor loading. We decided to eliminate items that had an absolute factor loading with their latent variable (factor) equal to or below .500. In making this choice of criteria, we kept in mind the recommendation to retain items with a factor loading of 0.40 or above (Boateng et al., 2018), deciding for a stricter cut-off given the large number of original items. In this process we dropped 54 items.

Reporting all results for this step would be too much even for the supplementary online materials. A reader interested in these analyses might find the data as well as the syntaxes on: https://osf.io/8j4gb/?view_only=18e231d57740484483d363f1bed49d00.

**Step 3.** The previous initial steps of systematic item review were followed by a final stage of inter-judge concertation. This procedure allowed us to eliminate 19 more items, which were less relevant in conceptual and theoretical terms considering the whole model, and to create the final scale. Although they showed a lower value than our previous decision criterion (factors loadings of 0.28 and 0.23), we also decided to keep two items previously eliminated (factor 3, Organisation) because of their conceptual and theoretical relevance.

As shown in Table 1, the final form of the CCCS consists of 19 items, grouped into eight conceptual factors, answering the questions: "Why do people engage in collective cheating?" (2 items), "How does collective cheating start?" (2 items), "How is collective cheating organised?" (2 sub-factors, 4 items in total), "What are the risks of collective cheating?" (3 items), "Is whistleblowing likely?" (2 items), "How do you explain that cheating happens?" (4 items), "What impact does cheating have on the group?" (2 items).

**Table 1**

*Items of the Final CCCS Scale*

| Conceptual factor | Item number | Question/Items |
|---|---|---|
| | | *Why do people engage in collective cheating?* |
| Reasons | CCCS1 | To improve their grade or get a good grade |
| | CCCS2 | To avoid a bad grade |
| | | *How does collective cheating start?* |
| Birth | CCCS3 | The decision to cheat together is a collective one, with no one proposing more than another |
| | CCCS4 | There is a kind of connivance, a secret agreement among group members |
| | | *How is collective cheating organised?* |

| | | |
|---|---|---|
| Organisation (planning) | CCCS5 | The cheating is planned beforehand, among group members |
| | CCCS6 | Group members discuss beforehand to plan the what and how of the cheating |
| Organisation (routine) | CCCS7 | Cheating and its procedure is always the same |
| | CCCS8 | This kind of cheating is frequent, students are used to it |
| | | *What are the risks of collective cheating?* |
| Risk management | CCCS9 | The risks of being caught are minimal |
| | CCCS10 | Group members do not risk much by cheating as they do |
| | CCCS11 | Cheating is done very quickly, requiring little effort |
| | | *Is whistleblowing likely?* |
| Concealment strategies | CCCS12 | Nobody reports because group members trust each other |
| | CCCS13 | Nobody reports and betrays the trust among group members |
| | | *How do you explain that cheating happens*? |
| Justifications | CCCS14 | One person is particularly competent in a certain domain, the others ask for help |
| | CCCS15 | Others ask to cheat because a person know how to do it and could pass on the answers or the assignment |
| | CCCS16 | One person does it to support classmates who are in trouble |
| | CCCS17 | One person does it for others, to help them out |
| | | *What impact does cheating have on the group?* |
| Social impact | CCCS18 | These events strengthen the bonds among group members |
| | CCCS19 | These events improve the relationship among group members |

**Scale Evaluation**

Confirmatory factor analyses were performed to test the structure of the underlying model of the CCCS scale. We computed four models to compare different factor structures and we performed a series of CFA to test each model's fit (see Table 2).

Model 1 tested the hypothesis that a second-order factor—an overarching Culture of collective cheating factor—can account for the relationship between the seven factors of the CCCS. In this model, the four items of Organisation of collective cheating (see Table 1) are considered under one single factor.

Model 2 tested the same second-order structure as Model 1, but in the CFA we considered the four items of Organisation of collective cheating under two different factors, i.e. Organisation (planning) and Organisation (routine), and this for conceptual reasons. Thus, this model involved eight factors and a second-order factor (an overarching Culture of collective cheating factor).

Model 3 tested the hypothesis that the seven factors of the CCCS were related to one another—because the chronological nature of the factors (called themes in Zanetti & Butera, 2022)—without assuming a secondo-order factor structure. Model 3 was performed with seven factors, the four items of Organisation of collective cheating under one single factor, as in Model 1.

Model 4 tested the same structure as Model 3 but the four items of Organisation of collective cheating was considered under two different factors, i.e. Organisation (planning) and Organisation (routine).

**Table 2**

*Confirmatory Factor Analysis of the Culture of Collective Cheating Scale*

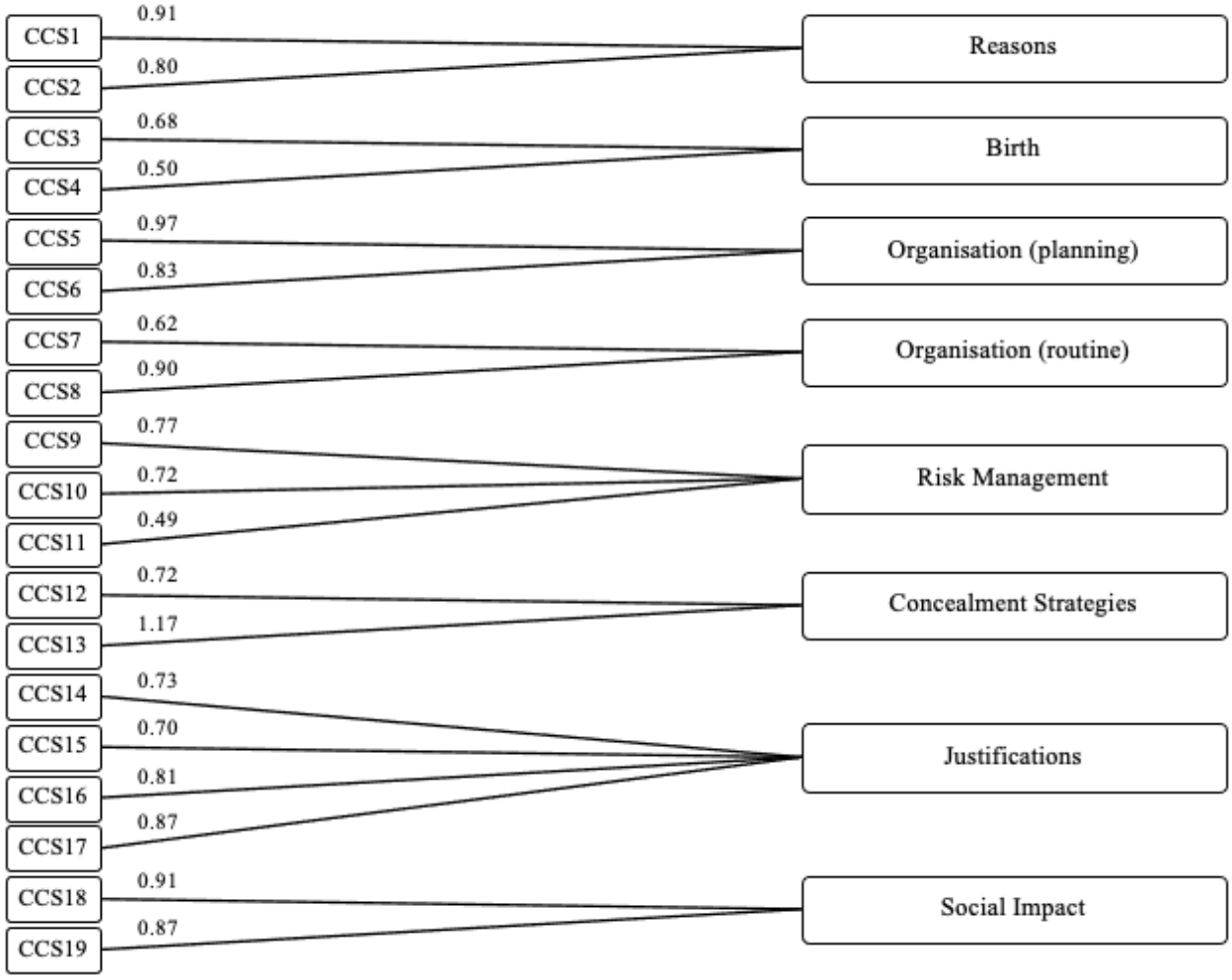
| | Fit Indexes | | | | | |
|---|---|---|---|---|---|---|
| Models | *χ2* | *df* | *χ2/df Ratio* | *CFI* | *SRMR* | *AIC* |
| Model 1 | 439.03*** | 145 | 3.03 | 0.85 | 0.11 | 15030.43 |
| Model 2 | 325.22*** | 144 | 2.26 | 0.91 | 0.10 | 14918.62 |
| Model 3 | 360.16*** | 131 | 2.75 | 0.88 | 0.08 | 14979.55 |
| Model 4 | 241.76*** | 124 | 1.95 | 0.94 | 0.06 | 14875.16 |

*Note.* CFI = comparative fit index; SRMR = Standardized Root Mean Square Residual; AIC = Akaike. *** $p < .001$

As shown in Table 2, Model 4 showed the best fit indexes (Hu & Bentler, 1999). In order to test if Model 4 fitted better than the other three models, we computed a *χ2* difference test. Results showed that Model 4 fitted significantly better than models 1, 2 and 3 (complete analysis available on https://osf.io/8j4gb/?view_only=18e231d57740484483d363f1bed49d00). Thus, Model 4 was retained as the structure of the CCCS. This result suggested that the eight factors are related but that participants discriminated between them. Figure 2 showed the factor loadings of the retained model.

**Figure 2**

*The Collective Cheating Culture Model (Model 4)*




As presented in Table 3, we also assessed the reliability of the CCCS and each conceptual factor by examining the Cronbach's alpha (Cronbach, 1951), and, in case the conceptual factor consisted of two items only, the inter-item correlation. Considering the whole 19-item scale, the Cronbach's alpha was acceptable ($\alpha = .70$). Apart from the second conceptual factor, i.e., Birth of collective cheating, showing a moderate correlation between the two scale items, the other conceptual factors showed acceptable internal consistency indices.

**Table 3**

*Descriptive Statistics of the Culture of Collective Cheating Scale*

| | | M | V | α/*r* |
|---|---|---|---|---|
| | CCCS (19 items) | 4.03 | .34 | α = .70 |
| CCCS Conceptual Factors | Reasons | 5.02 | .00 | *r* = .76 |
| | Birth | 4.02 | .00 | *r* = .37 |
| | Organisation (planning) | 3.34 | .02 | *r* = .81 |
| | Organisation (routine) | 3.29 | .01 | *r* = .57 |
| | Risk management | 3.92 | .15 | α = .71 |
| | Concealment strategies | 4.88 | .01 | *r* = .81 |
| | Justifications | 3.89 | .06 | α = .87 |
| | Social impact | 3.79 | .02 | *r* = .79 |

**Discussion**

Study 1 aimed to develop a collective cheating culture scale (CCCS) and tested its structure. As we have seen in the results, the CCCS is an eight-factor scale and these conceptual factors are interrelated, referring to an existing culture of collective cheating in the academic environment.

This structure may allow users to treat the scale in two alternative ways. On the one hand, the scale can be used in a global way, with an overall score that would reflect the extent of the collective cheating culture in a given context. Such score could be computed as a sum of the points given by individuals to all the 19 items constituting the scale. A higher score would reflect more factors present at the same time or more strong factors, i.e., factors to which the individual has given many points and which account for most of the total sum of the scale. Thus, the higher the score, the more the examined context would be defined by a strong collective cheating culture. On the other hand, the structure of the CCCS scale could

also be used by looking at the sub-scales separately, to make an ad hoc analysis of a specific context.

## Study 2

The aim of Study 2 was to test the construct validity of the CCCS developed in Study 1. In order to test the construct validity, participants responded to the CCCS after reading a vignette describing an episode of collective cheating done in a context where a collective cheating norm was present vs. absent. If it is true that the scale reflects the extent to which a collective cheating culture is present, then participants should score higher on the CCCS in presence of a collective cheating culture than in its absence (H1).

### Method

#### *Participants*

We recruited 776 participants via Amazon Mechanical Turk using CloudResearch (formerly TurkPrime; see Litman et al., 2017) and they were paid $3.60 per hour, more than the median reservation wage of $1.38 per hour, i.e., the minimum compensation that could be accepted for performing a task (Horton & Chilton, 2010). The average age of participants was 37.43 years old (*SD* = 12.03), 56.8% were women and 99.6% lived in the United States of America at the time of the study. According to a sensitivity analysis (G*Power), the final sample allowed to detect an effect size of $d = 0.20$ (two-tailed, $\alpha = .05$, Power = 0.8).

#### *Procedure*

As the previous study, Study 2 was presented as research on collective cheating in school contexts. We informed participants of their voluntary participation and the anonymity of collected data in a consent form they were asked to sign to participate in the study.

As a first task, participants were invited to carefully read a description of a collective cheating episode taking place in school. They were then asked to answer to manipulation check questions, and finally to the CCCS and some sociodemographic information.

### *Independent Variable*

The experimental manipulation intervened in the first part of the experiment, when participants were asked to read a description of a collective cheating event in school. Participants were randomly assigned to one of two experimental conditions where we manipulated the presence vs. absence of a culture of collective cheating. Both vignettes started with the same following paragraph "Pat, Chris and Alex are three students enrolled in their first year of high school. The end of the semester is approaching, and the three of them will have to hand in an important group project that will determine their admission in second year. One of them has some friends who did the same course two years ago. The type of project required to pass the year is the same." In the presence of a culture of collective cheating condition, collective cheating was described as a well-known routine "Pat, Chris and Alex have cheated before; they are used to. This time too, they decide to ask these former students for a copy of their work. These students are not surprised by this request as they were also used to cheat. Thus, Pat, Chris and Alex plagiarize their project: They copy everything and put their names on the work they hand in to their teacher." In contrast, in the absence of a culture of collective cheating condition, the cheating done by the group was described as an exceptional behaviour, "Pat, Chris and Alex never cheated before; they are not used to. But this time, they decide to ask these former students for a copy of their work. These students do not suspect anything as they were not used to cheat. Thus, Pat, Chris and Alex plagiarize their project: They copy everything and put their names on the work they hand in to their teacher."

### *Measures*

**Manipulation Check.** To assess the effectiveness of our manipulation, i.e., the presence/absence of a collective cheating culture, participants answered the following two items "To what extent do you think that collective cheating is a common practice in the high school these students attend?" and "To what extent do you think students usually cheat

together in this high school?". Ratings were made on a 7-point scale from 1 (*not at all*) to 7 (*totally*). The correlation between the two manipulation check items was $r(774) = .81$, $p < .001$. The mean of the two items was computed for the analysis.

**Collective Cheating Culture.** To measure the culture of collective cheating we employed the CCCS, the scale we developed in Study 1 (see Table 1 for the items). The items were to be rated on a 7-point scale from 1 (*totally disagree*) to 7 (*totally agree*). Cronbach's alpha for all 19 items was .79. As a score for the analysis, we computed and used the sum of all item responses.

**Sociodemographic Information.** At the end of the survey, participants were invited to report their age, gender, nationality(ies), country where they lived at the moment of the experiment, highest diploma obtained and field of study/profession. Only age, gender, and country were mandatory questions. In preliminarily analysis, neither gender nor age had an impact on our focus measure and were not included in further analysis.

## Results

### *Manipulation Check*

To test the efficacy of the manipulation related to the presence or the absence of a collective cheating norm, a two-sample t-test was performed. Since the Levene's test for heterogeneity of variances was significant, $F = 56.73$, $p < .001$, indicating unequal variances, result of the Welch's t-test was considered. Participants in the presence of collective cheating culture condition scored significantly higher on the manipulation check score ($M = 5.55$, $SD = 1.27$) compared to participants in the absence of collective cheating culture condition ($M = 4.38$, $SD = 1.70$), Welch's $t(719.817) = 10.94$, $p < .001$, $d = 0.79$. As robustness check, given a significant deviance from normality for the manipulation check score, $W(765) = .93$, $p < .001$, a Mann-Whitney test was conducted as well. Results indicated a significant difference

between the two experimental conditions, $U(N_{presence} = 386, N_{absence} = 389) = 44381.00$, $z = 9.92$, $p < .001$, $r = .36$., suggesting the effectiveness of our manipulation.

***Construct Validity***

To test the construct validity of the CCCS, a two-sample t-test was performed. Participants in the presence of collective cheating culture condition ($M = 89.50$, $SD = 13.35$) scored significantly higher on the CCCS compared to participants in the absence of collective cheating culture condition ($M = 85.55$, $SD = 14.06$), $t(764) = 3.99$, $p < .001$, $d = 0.29$. Again, given a significant deviance from normality for the CCCS distribution, $W(765) = .99$, $p < .001$, a Mann-Whitney test was conducted as a robustness check. Results indicated a significant difference between the two experimental conditions, $U(N_{presence} = 384, N_{absence} = 382) = 60119.00$, $z = 4.32$, $p < .001$, $r = .16$.

**Discussion**

Results of Study 2 showed the construct validity of the CCCS, as assumed in H1. When a culture of collective cheating was represented in the school context by routinized cheating, participants scored higher on the CCCS compared to participants who were not in the presence of a culture of collective cheating. This finding shows that the scale we developed convincingly captures what it is supposed to measure, i.e., the extent of an existing culture of collective cheating. High scores on CCCS would therefore allow to detect a classroom structure or academic context in which collective cheating is part of the culture.

## Study 3

The aim of Study 3 was to test the convergent and the predictive validity of the CCCS. As for convergent validity, we incorporated the CCCS in a survey where other measures were administered, namely moral disengagement (H2), guilt (H3) and perceived responsibility (H4). As for predictive validity, we assessed the acceptance of collective cheating (H5).

## Method

### *Participants*

896 participants were recruited for this study. As for Study 2, participants were recruited via Amazon Mechanical Turk using CloudResearch under the same conditions. Among them, 59 participants were dropped because their work did not comply with the instructions given to complete the task. The final sample consisted of 837 participants: The average age was 34.94 years old (*SD* = 11.64), 58.9% were women and 99.8% lived in the United States of America at the time of the study. According to a sensitivity analysis based on a bivariate normal model (G*Power), the final sample allowed to detect an effect size of $r$ = 0.10 (two-tailed, $\alpha$ = .05, Power = 0.8). The dropped participants were similar to the retained participants in age, $t(894) = .58$, $p = .56$, $d = .08$, and gender, $\chi 2$ (1, $N$ = 881) = 1.65 , $p = .20$, $\varphi = .04$.

### *Procedure*

As for the previous studies, Study 3 was presented as exploring collective cheating in school and academic settings. After signing the consent form, participants were asked to describe in a written form a collective cheating event, i.e., an autobiographical memory that had taken place in school or another academic setting. The event could be one where they were protagonists of the cheating, i.e., participants themselves cheated with others, or as witnesses, i.e., participants witnessed a collective cheating event. The activation of autobiographical memories has been shown to be a successful technique to immerse the participants in a specific situation (e.g., Gerrards-Hesse et al., 1994; Graton & Ric, 2017; Maner et al., 2007). Then, they were invited to complete a survey with measures of the culture of collective cheating, guilt and responsibility, moral disengagement, acceptance of cheating and sociodemographic information (see below). As previously mentioned, we excluded from the analyses participants who described: (a) memories of individual cheating, i.e., involving

one person, and (b) memories of cheatings in other settings, as professional, relational or games, and (c) memories of teachers or faculty members (because outside the peer ingroup) when they reported an event as witnesses, and (d) irrelevant texts.

We note that in this study, convergent and predictive validities are assessed with a paradigm based on past events. The idea is therefore that the activation of a collective cheating culture, via the recall of a past memory, is associated with and predicts, respectively, current attitudes towards and acceptance of collective cheating. Indeed, consistently with the literature in the field of memory, specific memories are characterized by a state of reliving the entire encoding situation (e.g., Conway, 2005; Tulving, 2001).

***Measures***

**Culture of Collective Cheating.** As in Study 2, to assess the culture of collective cheating, we administered the CCCS developed in Study 1. Since the participants could answer as protagonists in the event or as witnesses, two versions of the questionnaire were proposed depending on their response to the question "What kind of old or recent event(s) do you remember?" where the possible answers were "Collective cheating(s) in which I was involved" or "Collective cheating(s) that I witnessed". The only difference between the two versions was the subject of the questions and answers, i.e. "Why did your group engage in collective cheating?" for protagonists ($N$ = 438) or "Why did these people engage in collective cheating?" for witness ($N$ = 399). Rating was made on a 7-point scale from 1 (*totally disagree*) to 7 (*totally agree*). The sum of the responses to the 19 items was again used as the score for the analyses (descriptive statistics and correlations between scores in Table 4).

**Moral Disengagement.** Two scales were used to assess participants' moral disengagement. We employed the six items of the Moral Disengagement (about cheating) scale developed by Shu et al. (2011), e.g., "Cheating is appropriate behaviour because no one

gets hurt" and ten items of the Academic Moral Disengagement scale by Farnese et al. (2011), e.g., "Copying during the exams of "nasty" teachers is a way to teach them a lesson". Items of both measures were presented randomly to participants. Ratings were made on a 7-point scale from 1 (*totally disagree*) to 7 (*totally agree*). For each measure, the mean score of the items was computed.

**Guilt.** To assess the extent to which participants perceive members of the collective cheating as feeling or being guilty, we employed the following two items "How guilty do you think group members felt when engaged in collective cheating" and "How guilty do you think group members were when engaged in collective cheating?". Ratings were made on a 7-point scale from 1 (not at all guilty) to 7 (totally guilty). The mean of the two items was computed as the score for the analyses.

**Responsibility.** To measure the extent to which participants perceive members of the collective cheating as responsible, the following two items were used "How responsible for the cheating do you think group members felt when engaged in collective cheating?" and "How responsible for the cheating do you think group members were when engaged in collective cheating?". Rating was made on a 7-point scale from 1 (*not at all responsible*) to 7 (*totally responsible*). The mean of the two items was computed as the score for the analyses.

**Acceptance of Collective Cheating.** To measure individual acceptance of collective cheating, we employed two sets of measures: (1) three items (In general, for you, it is ok …"Sometimes to get test-related information off friends who took the test earlier in the day or week"; "Sometimes to share individual homework answers"; "Sometimes to get help on assignments from family members or friends outside school") from the Acceptance of Cheating scale by Pulfrey et al. (2018); (2) four items from the Cheating Behaviour scale by Farnese et al. (2011) (… "Using someone else's text without referencing it (for essays, theses,

etc.)"; "Giving hints to classmates during exams"; "Copying sections of online texts or papers without referencing them"; "Looking for hints from classmates during exams".

The items were to be rated on a 7-point scale from 1 (*totally disagree*) to 7 (*totally agree*). The mean of the items from both scales was computed as a single score.

**Sociodemographic Information.** The same sociodemographic information as in Study 2 was asked at the end of the survey. Preliminary analyses with age and gender did not show any impact on the main measure. These variables were therefore dropped from the main analyses.

## Results

### *Convergent Validity*

Table 4 shows the intercorrelations between the CCCS and the two measures of moral disengagement we administered in order assess the convergent validity of our scale (H2). As expected, even if weak (Cohen, 1988), results showed significant and positive correlations between the CCCS and the two measures of moral disengagement.

Additionally, we tested the relation between the CCCS and the measures of guilt and responsibly. The correlations between the CCCS and the perception of guilt (H3) and responsibility (H4) showed a significant negative weak correlation between the CCCS and the guilt score and no correlation with the responsibility score.

**Table 4**

*Means, Standard Deviation, Reliability and Pearson Correlations between measures of the Culture of Collective Cheating, Moral Disengagement, Guilt, Responsibility and Acceptance of Collective Cheating*

| | *M* | *SD* | α/*r* | 1. | 2. | 3. | 4. | 5. | 6. | 7. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. CCS (Culture of Collective Cheating) | 94.26 | 15.40 | α=.75 | | | | | | | |
| 2. Moral Disengagement (about cheating) | 3.24 | 1.44 | α=.88 | .27** | | | | | | |
| 3. Academic Moral Disengagement | 3.14 | 1.31 | α=.89 | .26** | .88** | | | | | |
| 4. Guilt | 3.69 | 1.74 | *r*=.55** | -.08* | -.13** | -.08* | | | | |
| 5. Responsibility | 4.74 | 1.69 | *r*=.67** | .03 | -.10** | -.08* | .43** | | | |
| 6. Acceptance of Cheating | 4.51 | 1.59 | α=.78 | .18** | .57** | .55** | -.19** | -.01* | | |
| 7. Cheating Behaviour | 2.63 | 1.55 | α=.89 | .27** | .71** | .75** | -.01 | -.05 | .54** | |
| 8. Acceptance of Collective Cheating | 3.44 | 1.38 | α=.87 | .26** | .74** | .76** | -.10** | -.07* | .84** | .91** |

*Note.* ** $p < .01$, * $p < .05$

***Predictive Validity***

A simple linear regression was used to test the predictive validity of the CCCS, with acceptance of collective cheating (H5). The overall regression was significant, $F(1, 834) = 60.56$, $p < .001$, $R^2 = .07$. As expected, the CCCS was found to significantly predict the

acceptance of collective cheating, $b = 0.02$, $t(835) = 7.78$, $p < .001$. This result supports the predictive validity of our scale.

***Supplementary Analyses***

Participants could share an event of collective cheating in which they were protagonists or witnesses. Two-sample t-tests were performed and results showed significant differences on most measures. As shown in Table 5, participants who related an experience of collective cheating as protagonist scored significantly higher, compared to witnesses, on the CCCS, $t(835) = 2.79$, $p = .005$, $d = 0.19$, on the two moral disengagement measures, $t(835) = 8.68$, $p < .001$, $d = 0.60$ for moral disengagement about cheating, $t(835) = 7.58$, $p < .001$, $d = 0.52$ for academic moral disengagement, and, finally, on the acceptance of collective cheating scale, Welch's $t(833.808) = 10.72$, $p < .001$, $d = 0.74$. No significant differences were found between the two samples for guilt, $t(833) = 0.87$, $p = .39$, $d = 0.06$ and responsibility, $t(834) = 0.31$, $p = .76$, $d = 0.02$. As one can see in Tables S1 and S2 of the Supplementary Materials B, these differences translate into differences in terms of correlations. For participants who experienced a collective cheating as protagonists, the correlations between CSS and the other measures are stronger ($r = .35$ and $r = .32$ for the two measures of moral disengagement).

**Table 5**

*Means and Standard Deviation for Measures of the Culture of Collective Cheating, Moral Disengagement and Acceptance of Collective Cheating According to the Sample (Protagonist or Witness)*

| | Protagonists Sample ($N$ = 438) | | Witnesses Sample ($N$ = 399) | |
|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* |
| CCCS (Culture of Collective Cheating) | 95.67 | 15.39 | 92.71 | 15.27 |
| Moral Disengagement (about cheating) | 3.63 | 1.42 | 2.80 | 1.33 |
| Academic Moral Disengagement | 3.45 | 1.30 | 2.79 | 1.23 |
| Guilt | 3.64 | 1.78 | 3.75 | 1.70 |
| Responsibility | 4.75 | 1.72 | 4.72 | 1.66 |
| Acceptance of Collective Cheating | 3.89 | 1.34 | 2.94 | 1.24 |

**Discussion**

Results of Study 3 gave support to convergent and predictive validity of the CCCS. Correlations showed that the CCCS scale tended to vary in the same direction as the moral disengagement measures, supporting the convergent validity of the scale. According to the criteria commonly adopted, correlations between the CCCS and moral disengagement measures were positive but weak, which is a sign that the two constructs do not overlap. Our scale therefore captures something different from moral disengagement, i.e., it captures a culture of collective cheating, but varies with the latter construct, which is consistent with results showing that moral disengagement is related to the perception that others are cheating (Farnese et al., 2011).

Even if weak, we found a negative correlation between the CCCS and guilt. As expected, the higher the culture of cheating was reported, the lower guilt was. Unexpectedly,

we did not find a relevant relationship between the CCCS and measure of responsibility. Perhaps responding to the scale by expressing about the event experienced/seen, regardless of the extent of the culture, buffered perceived responsibility.

Results are also supportive of the predictive validity of the CCCS, showing that our scale positively predicted the acceptance of collective cheating measure: The higher the collective cheating culture was, the more collective cheating was accepted.

Finally, a word on the differences we found between participants who reported an event of collective cheating as protagonist or as witness. These differences, even if not anticipated, are not surprising, and actually speak to the validity of the scale: Participants who have had the actual experience of collective cheating scored higher on the scale we developed. With these participants, the cheating culture was probably more present and vivid, which also justified the greater acceptance of cheating, and the lower perceived guilt. Moreover, given the relationship between cheating and moral disengagement (e.g., Shu et al., 2011), it is not surprising that these participants' moral disengagement mechanisms were more activated compared to participants who, having witnessed it, did not need to protect their self-concept and activate such mechanisms (Bandura, 1999, 2002).

## General Discussion

The aim of this research was to reflect on the fact that very often cheating, and collective cheating in particular, emerges in contexts where a culture of collective cheating prevails. After providing the theoretical rationale for the construct we proposed to develop a measure of collective cheating culture in school and academic fields. The choice of these fields was justified by the prevalence of cheating in school and the academia (e.g., Teixeira & Rocha, 2010) and in response to a lack of instruments to assess this specific but highly topical issue. Study 1 allowed to develop the materials and test the structure of such a measure. This resulted in a 19-item scale, the Collective Cheating Culture Scale (CCCS), composed of eight

coherent factors which allow computing a single overall score by summing the scores of the 19 items. Study 2 tested the convergent validity of the CCCS in an experimental study, and shoed that indeed participants reported higher CCCS scores when assessing a cheating event taking place in an environment in which that was commonplace, compared to the same even described as unique. Study 3 tested the convergent and predictive validity of the CCCS, and showed its positive association with moral disengagement, its negative association with guilt, and the ability to predict the acceptance of cheating. Overall, the results showed a good structure of the CCCS and supported its validity.

**Contribution to the Literature on Collective Cheating**

We believe that the present research and the measure we developed could make three interesting contributions to the growing literature on collective cheating. The first contribution is theoretical. Discussing the existence of collective cheating in terms of norms and culture allowed (1) to bring together a scattered literature and, moreover, (2) to highlight that there are facilitating contexts for the emergence of collective cheating that can be chronically set in certain institutional environments. Indeed, reviewing this literature revealed that a descriptive norm in favour of collective cheating (e.g., peers cheat or accept cheating), or a permissive culture at the institutional level (one that does not uphold honesty) promoted cheating behaviour in groups. Considering the context in cultural and normative terms is therefore crucial when looking at collective dishonesty.

However, as stated in the introduction, despite these convergent findings, there is a lack of instruments able to measure the presence of a culture of collective dishonesty at the contextual level. This leads to a second important contribution of this research: The development of a measure that can be used to assess the existence—and the magnitude—of a culture of collective cheating in a given context. To our knowledge, the CCCS is the first instrument allowing to measure such construct. In our view, this is an important and useful

contribution to future research in this field. Although the literature has shown the importance of culture and norms on cheating behaviour—individual and collective—, due to the lack of instruments, there are no studies that directly tested the impact of the existence and extent of collective cheating culture on actual behaviour.

The third contribution of the present work is related to our results on predictive validity. Indeed, in our studies testing the validity of the CCCS, we found that not only can culture of collective cheating be higher or lower in a context as a function of the prevalence of collective cheating behaviour (cf. Study 2), but we also found support to the hypothesis that the importance or the magnitude of this culture positively predicts the acceptance of a group's cheating behaviour. This is an important result to point to the contextual origin of collective cheating.

**Contribution to Applied Educational Research and Intervention**

Three contributions with practical implications deserve to be highlighted. The first one is the peculiar structure of the CCCS which allows researchers and practitioners to use the measure in two complementary ways. With the aim to assess the extent of the collective cheating culture in a specific context, be it a classroom, a school or a district, the CCCS might be used as an overall score (the sum of the scores on the different sub-scales, all items). In this case, the higher the score, the more the scale reflects a strong culture of collective cheating, either in terms of (1) the quantity of characteristic factors or (2) the strength of certain factors typical of collective cheating. Indeed, a higher score may reflect the following two situations. (1) An individual responds positively, to a greater or lesser extent, to all items (and therefore to all subscales). This situation shows that existing local culture of collective cheating is pervasive and has the typical characteristics proposed by the scale. (2) An individual responds very highly only on certain subscales. This shows that in the specific collective cheating culture in place some of the characteristics proposed in the scale are exacerbated, but not all.

This may give a diagnosis of a particular characteristic of the culture, e.g., very performance-oriented if a person responds very favourably to items in the first scale (reasons for collective cheating), where cheating as a group is seen as a solution.

The second use involves employing the sub-scales (one or more) separately. This allows for a one-off diagnosis in order to detect a potential specific problem in relation to the determinants of collective cheating. Thus, it is possible to propose one or more scales only to assess whether a certain specific aspect—typical of collective cheating—is present or not in a certain context. If we take the example from earlier, the first subscale (reasons for collective cheating) can be proposed and to evaluate whether the culture in place in a classroom favours the use of collective cheating as a means of satisfying extrinsic, performance-oriented motivations (high sub-scale score) or not (low score), due to, say, a very selective curriculum or a performance classroom goal structure. For this purpose, in case practitioners wanted to gather specific knowledge on peculiar aspects of collective cheating in a given context, the long scale, with more rich sub-scales, is available in Supplementary Material A.

The final point we wish to make is that the CCCS has been used in two versions: One for people who have been protagonists of a collective cheating episode and one for witnesses of such an event. For intervention in educational setting, it may be interesting to know that two uses are possible, depending on the approach and the purpose. For instance, the protagonist version could be employed after an episode of collective cheating to evaluate the culture of collective cheating in the context among the people involved. This may help intervene in a relevant way, at the classroom or school level, for example via the promotion of a culture of honesty. The witness's version can be used to assess the local culture and intervene preventively on potential determinants. In this case, even students who have witnessed collective cheating can respond and help assessing the extent of the collective cheating culture in place.

### Limitations and Future Research

We observed that the scale lost in richness with the reduction of the items. Indeed, the 109 original items included facets or elements of collective cheating experience which are no longer represented in the final CCCS, for the sake of conceptual coherence and parsimony. The use of the long version—not validated—is always possible by using all the items if the research purpose needed it.

Another point that needs to be raised is the difference we found—in Study 3—between protagonist and witnesses of collective cheating experiences. For the development of the CCCS we focused on participants who had been protagonists of such an event. For study 3, which aimed to test the convergent and predictive validity of our scale, we tested the scale with both samples. However, supplementary analysis showed that there was a difference between the two samples on the main measures, with an effect size ranging from small to medium.

Another interesting point is the context of use of the CCCS. Although it was developed and validated in relation to an academic setting, by adapting some items our scale could be used in other contexts where it seems necessary to detect a culture favourable to collective cheating, such as professional or sports contexts.

Finally, we found that the CCCS positively predicted cheating behaviour, using a proxy—the acceptance of cheating—of this latter. Although a relation has been shown between the acceptance of cheating and actual behaviour (e.g., Jordan, 2001), the strength of the relationship between the CCCS and the behavioural component deserved to be tested with future research.

## Conclusions

Cheating decisions and behaviours are influenced by the culture (of cheating) existing in a specific context, and this is also true for cheating in groups. From a pool of 109 items, we

developed a 19-item scale—the Collective Cheating Culture Scale (CCCS)—measuring the extent of the culture of collective cheating in an academic or school setting. We then tested the validity of the CCCS and found support to the construct, convergent and predictive validity of the new scale we developed. The CCCS can have multiple uses, to account for the extent of a culture or to detect a specific problem in terms of collective dishonesty.

# GENERAL DISCUSSION

A question people often ask when talking about dishonesty is whether everyone can engage in collective cheating. The answer that emerges from hundreds of studies is that ordinary people, in their everyday lives, at school, at work, in their sports competitions, can fall to the (moral) dark side by cheating with others. Despite the growing body of literature dealing with collective dishonesty, some of the elements needed to qualify this answer were still pending. How does collective cheating come about and how does it get organised? What are its specific antecedents and mechanisms? What role does context play?

With its five chapters, the aim of this thesis was to contribute to a deeper understanding of the collective cheating phenomenon, by providing some answers to these important research questions. Firstly, with the first chapter "A contextual-motivational model of collective cheating: A conceptual synthesis and a literature review", we proposed a model of collective cheating, gathering a sizeable literature that touches, from different perspectives, on collective dishonesty in terms of antecedents and mechanisms. By structuring this literature on the basis of the Murdock and Anderman's framework (2006), we highlighted that in collective cheating experiences, people are more likely to cheat a) for extrinsic and/or social motives, b) when the self- and the group-efficacy is low and c) when members can more easily handle or reduce the costs of their action  in terms of consequences or in moral terms. Although many of the characteristics of collective dishonesty overlap with those identified for individual cheating, with the framework we proposed, we pinpointed some unique features of cheating in groups. The collective nature of this form of dishonesty appears to play a key role in collective cheating experiences. Indeed, in motivational terms, the presence of an ingroup provides the basis—and gives rise—to (pro)social motivations, i.e., cheating together for the benefit of peers. The group also seems to offer a foundation for anticipatory justifications. In collective cheating, people not only tend to feel less concerned

and responsible, but the justification of collective dishonesty also seems to be easier because the aim of the wrongdoing is perceived as intrinsically benevolent and moral. The ingroup frees the consciousness and responsibility of the individuals.

Despite the growing literature on collective dishonesty we reviewed, the episode of collective cheating has been seldom investigated in its entirety. In the second chapter “The chronology of collective cheating: A qualitative study of collective dishonesty in academic contexts”, we retraced the chronology of collective cheating episodes in school or academic contexts, from its beginning to its social impact. The opportunity to see the event as a whole allowed us to identify central components of collective cheating. We found the importance of extrinsic and social reasons, as well as the role of the group in terms of positive interdependence and social norms, and this, even if participants recalled collective cheatings that varied in terms of form and organisation. Finally, a core element that this research emphasized is that cheating in a group can be perceived and valued positively. Indeed, participants recalled collective cheatings with satisfaction and appealed on notions of cooperation, group cohesion, trust and solidarity between members to explain their involvement in such dishonesty. These positive characteristics attributed to collective cheating not only make it possible to construct moral justifications for the group, but also raise questions about the perception of one's own moral responsibility.

In the “The liberating effect of the group: Past experience of cheating together makes us feel less responsible and less guilty” chapter, we therefore explored these components: Responsibility and feelings of guilt, which seemed to be reduced when cheating in groups. In this third chapter, we empirically tested the common diffusion of responsibility hypothesis as a moral disengagement mechanism involved in collective cheating. Our results gave support to this hypothesis showing that people felt less responsible when recalling an experience of collective versus individual cheating. Not only did people feel less responsible in collective

cheating situations, but they also reported feeling less guilty. In this respect, we have shown that the decrease in individual responsibility due to collective cheating led to the decrease in the feeling of guilt. As we have largely emphasised in previous chapters, collective cheating appears to be a cooperative process. Cooperation is often mentioned as the basis of collective dishonesty, but such conjecture had not yet been empirically tested.

In the fourth chapter, "Cooperative dishonesty: When working together means cheating together", we empirically tested the role of cooperation in collective dishonesty. We found that the history of cooperation was an important predictor of collective cheating. Collective cheating appeared to a greater extent when group members cooperated over a long-term period compared to members who collaborated on an ad hoc basis. Interestingly, we also found an increase in reported ingroup cooperation after a collective cheating experience, thus as an outcome of it. This result appears to be in line with our qualitative study, which showed a positive view of the past cheating experience by cheaters, emphasising, *a posteriori*, its cooperative character. Finally, in the fifth chapter "Detecting collective cheating culture in academic contexts" we highlighted the extent to which culture and descriptive norms impact the acceptance of collective cheating. In this chapter, we thus developed—and validated—a novel measure, the Culture of Collective Cheating Scale (the CCCS), to assess this culture in a specific (academic) context.

**Contributions to the Literature**

Considering together all the lines of research conducted in this thesis, the first major contribution of this work is theoretical in nature. An important added value in the present thesis is that the literature we reviewed and considered throughout this work was a diverse literature, coming from various fields of study, as for instance social psychology, behavioural sciences, business ethics, criminology. The present research enriches the existing literature on collective cheating by organizing a scattered literature with unifying theoretical principles

(see chapters 1 and 5), exploring the collective cheating event in its entirety (see chapter 2), and testing specific antecedents and mechanisms involved in this behaviour (see chapters 3 and 4). By doing so, the present work contributes to a better understanding of dishonesty in groups. Here we summarize the major theoretical contributions from two main angles, that of group processes and that of the influences of the (local) culture.

***Group Processes***

Considering (in)group-processes, collective cheating appears to be perceived as a positive and altruistic behaviour, imbued with cohesion and solidarity, as discussed in the first and second chapters. With the fourth chapter, we clarified the role of cooperation in collective cheating experiences. In a context of competition, without financial incentives, it is the history of cooperation—how long group members work together—that emerges as a key factor for the extent of group cheating. Not only do our studies contribute to the literature on cooperation, showing its potential dark side, but they also contribute to the literature on the management of moral failure, in particular on moral disengagement theory (e.g., Bandura, 1990).

Indeed, the positive view of collective cheating and its social and cooperative nature seem to be key features that also affect the mechanisms of moral justifications based on group processes, thus allowing to deal easily with moral failure. Moreover, in the third chapter, we have found that, in these collective experiences, people feel less responsible—showing support for the diffusion of responsibility mechanism—and less guilty for their dishonesty. In the field of morality, theories have mainly focused on individual processes; with our research, we have shown that these justification mechanisms also exist in collective contexts, such as collective cheating. Moreover, we support the distinction between pre- and post-violation justifications (e.g., Shalvi et al., 2015), showing that, in collective dishonesty, justification

mechanisms can exist *a priori*, to justify upstream the commitment to cheating, or *a posteriori*, to explain—morally speaking—the event of collective cheating.

***Local Culture***

From the perspective of contextual and cultural aspects, this work allowed to highlight the importance of considering the context, in cultural and normative terms, in the understanding of collective cheating, thus contributing to the literature of the importance of descriptive norms (e.g., Cialdini et al., 1991) and moral standards (e.g., the self-concept maintenance theory, Mazar et al., 2008). Indeed, as we discussed in the first, second and last chapters, there are contexts which can, via the transmission of a norm and a culture, influence the emergence of collective cheating, and favour its chronic settlement. If what others do, the descriptive norm, appears to be in favour of collective dishonesty or if a (moral) permissive culture is installed, the appearance of collective cheating will be promoted. Indeed, in the last chapter, we empirically observed the impact of culture on the acceptance of collective cheating: The more the culture of cheating was present, the more participants had a positive attitude towards this collective behaviour. With our research, not only have we emphasized the influence that norms and culture, including the saliency of moral standards, have on dishonest behaviour, but we have also contributed to the literature on collective cheating by showing that this influence works on groups as well.

This work also represents a methodological contribution. In our last chapter, we developed and validated a new measure, the CCCS. This scale was created with the purpose of assessing the extent of the collective cheating culture in a specific context, and/or, to identify a particularity of the culture typical of situations where collective cheating is seen as a commonplace and a solution.

**Limitations and Future Research**

Despite the variety of contributions from diverse disciplines in the existing literature on collective dishonesty, several of our studies were concerned with academic cheating, which does not facilitate the generalization of our results to other fields. It would be interesting to test our experimental paradigms—and test the replication of the results—in other settings to further broaden the understanding of collective cheating and the impact that context has on this group behaviour. For instance, professional environments, which are often concerned with ethical issues (e.g., in decision-making processes, employees' behaviour towards the company) could be highly relevant places. In our retrospective studies, where people were asked to describe a collective cheating in any context, many participants talked about work-related events. This reinforces the need to investigate collective cheating in this area more closely.

Moreover, even if we recruited participants in different ways (university students, workers on paid survey sites, etc.), we based our studies on convenience samples, which again make it complex to generalize our findings. In the future, it would be interesting to adopt a perspective that would allow greater generalization, for example through international projects, or with an intercultural approach (e.g., see Bernardi et al., 2008; Teixeira & Rocha, 2010 for individual academic cheating; see Dorrough et al., 2023 for an international study on bribery).

Another point worth mentioning is the experimental paradigms we used. Except for the set of studies testing the impact of the history of cooperation, our studies were mainly based on the recall of an autobiographical memory of collective cheating, a well-established methodology (e.g., Gerrards-Hesse et al., 1994; Graton & Ric, 2017; Maner et al., 2007). It would therefore be interesting to test collective cheating in field studies. For instance, future

research could employ a longitudinal approach and design studies associating measures of responsibility and guilt with behavioural measures of cheating.

Our studies did not imply a reward, or a financial incentive associated with dishonesty; being dishonest did not increase the gain of the group but merely increased performance. The mere pressure to compete was sufficient to lead people to cheat. People were therefore motivated by extrinsic reasons which were not financial ones: demonstrate high performance and competence. Interestingly, it appears that competence, understood in reference to performance goals (e.g., Elliot & McGregor, 2001), emerged as a key concern in the discourse of participants in our qualitative study. Showing oneself to be competent seems to be a central motivation, far more important than showing oneself to be morally good. This need for competence, a fundamental human need (e.g., Ryan & Deci, 2000b), appeared to underpin engagement in collective cheating, even without tangible gain. This opens the door to research that can study ingroup processes and contextual influences involved in collective cheating according to the stakes and incentives. For example, we can imagine studies involving the superposition of several stakes: competence (e.g., a professional position) and financial gain, to determine the extent to which collective cheating behaviour evolves.

**Practical Implications**

The contribution of this work goes beyond the advancement of academic research and scientific knowledge. Through the work conducted in the framework of this thesis, we highlighted factors that can favour the emergence of collective cheating and provide fertile ground for its settlement and perpetuation. Identifying these factors is not only important for understanding this collective behaviour but can also be crucial for creating contexts that do not favour such behaviour, which, we recall here, can have negative and detrimental effects.

For instance, in educational contexts, institutions must be aware that systems—selection systems—such as numerus clauses or tracking could play a key role in people's

motives and their propensity to cheat. At the classroom level, a climate that puts the focus on the results—on grades—without considering and valuing the entire learning process, is also at risk of succumbing to practices of collective cheating. In order to reduce collective dishonesty, teachers can promote students' autonomous motivation, by establishing a climate of trust and cooperation (but without intergroup competition) and by giving for instance adapted tasks, of different nature and difficulty, in order to lead students to feel confident, supported and competent. In professional environments, companies need to pay particular attention to systems with strong pressures (unrealistic goals or deadlines), where rewards or bonuses are based on performance (e.g., amount of sales), with evaluation systems and tools increasing rivalry between employees. Working on employees' participation in decision-making, setting realistic goals and giving clear explanations, giving positive and constructive feedback, as well as promoting team membership via team-buildings, peer cooperation and tutoring are just some examples of practices that could be used to foster autonomous motivations and reduce dishonesty in professional groups.

We have assessed the crucial influence that culture and (descriptive) norms conveyed by the context can have on the decision to cheat collectively. We have seen interesting nudges in the literature on collective dishonesty that appear to reduce significantly cheating in groups. In order to reduce collective cheating, we recommend simple interventions, such as the signature of a code of honour or ethics during each new school year and in the context of exams, for example. We also encourage to favour a culture that promotes honesty, that communicates openly and clearly about ethics, about ethical standards, permitted and prohibited behaviours. We thus recommend companies to work on effective ethical code of conduct. Moreover, we wish once again to recall the power of the descriptive norm on cheating behaviour. For instance, in professional settings, it would be crucial to promote norms showing that cheating together is not something trivial, frequent, common, without

implications and consequences. In addition to honour or conduct codes, honesty must be a model of behaviour, also and especially on the part of hierarchical superiors, and leaders.

Finally, we can mention here again the measure we developed, as a contribution with major practical applications. In classroom or educational institutions, the CCCS could be used to identify the extent of the culture of academic collective cheating in place and, consequently, act on concrete contextual aspects with the aim to prevent or reduce these group behaviours.

**Final Remarks**

We began this general discussion with the question of whether everyone could at some point engage in collective cheating or not. What we have learned from this thesis work is that the answer is “yes”. Firstly, collective cheating seems to meet a fundamental human need: that of relatedness, belonging, being part of a social group. We are social beings, and we need others for our existence. Thus, working on collective cheating means working in the opposition between a dishonest behaviour and a deeply social and cooperative behaviour. On both sides, there is a cooperative dimension, people work together and are interdependent. On the one hand, cooperation promises major benefits in terms of cognition, relationships and well-being, but on the other hand, this same cooperation can have negative consequences, especially if it takes place in a climate of intergroup competition. We have seen that this point is central when talking about collective dishonesty because the presence of the ingroup provides the basis on which people build motivations and justifications for dishonest actions. Secondly, while we cannot ignore individual influences, such as personal values, having an impact on collective cheating behaviour or its acceptance, we also cannot deny the strong impact of the context where individuals and groups are embedded. Indeed, throughout this work, we have seen that context, between culture and descriptive norms, plays a central role

in the development of collective cheating and can have a real impact on the emergence and perpetuation of this behaviour.

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# APPENDICES

## Supplementary Materials Chapter 2

### Supplementary Material A

***Interview Guide***

**Main question**

- Remember one time during your school and/or academic career when you cheated with one or more of your classmates. What exactly happened?

**Follow-up questions**

- Who initiated the collaboration or who proposed it?
- How did you know that the other would have potentially accepted?
- How did you propose this cheating or how was it proposed to you?
- Did you trust the other (s)?
- How did you know you could trust the other?
- At that time, how did you judge the relationship with the other?
- After this event, did your relationship change?

**Supplementary Material B**

***Detailed Procedure of Thematic Analysis***

**Research Team.** The research team was composed by three researchers. Two members of the team were responsible for recruiting participants, conducting the interviews and transcribing them. The first two steps of the thematic analysis were carried out by these same two members until the generation of initial codes for the entire data set, when the third member intervened to verify the relevance and clarity of the generated codes. The search, review and definition of themes was mainly managed by one person of the team.

**Preliminary Decisions.** According to the recommendations of Braun and Clarke (2006), before starting the thematic analysis, we explicitly considered some choices about the analysis process. These preliminary and fundamental decisions were necessary because of the exploratory nature of the current study. First, since a theme "captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set" (Braun & Clarke, 2006, p. 82), a pattern, i.e. a recurrent schema of behaviour or meaning, was considered as a theme dependently on its prevalence across the dataset. With only one exception, all themes appeared in more than 75% of the interviews. Second, we chose to conduct the analysis as a complete description of the content, in order to get a rich overview of the predominant themes in the whole dataset. Third, the thematic analysis process was more inductive ("bottom up") than deductive or based on pre-existing theory-driven categories. Fourth, for theme identification, we chose to work either at the content-semantic level, i.e. the explicit meaning of content, or at the latent level, i.e. "beyond the semantic content of the data (…) the underlying ideas, assumptions, and conceptualizations." (Braun & Clarke, 2006, p. 84). Given the exploratory nature of the current project, a double and flexible approach was employed, working on both levels of the data.

**Familiarizing with Data.** The team read all the transcripts "in an active way – searching for meanings, patterns and so on" (Braun & Clarke, 2012). During this phase, we made some notes on the data set, "an initial list of ideas about what is in the data and what is interesting about them" (Braun & Clarke, 2006) that were shared between research team members.

**Generating Initial Codes.** To each relevant unit of meaning—i.e. a segment of the data relevant for the research question—we attributed a label, called a code, which reflected the idea—semantic or latent—contained in the portion of the considered data. Although this step can be done by a single person, we decided to complement Braun & Clarke's methodology with some guidelines drawn from the qualitative consensual approach research (Hill, 2012; Masdonati et al., 2017), in order to reinforce the analysis reliability. Following this approach, two team members worked separately generating and attributing codes on four interviews. Once this individual work ended, the team members compared each interview and each portion of data coded in order to find a consensus. This work allowed to establish a first list of codes which we applied, as a test to verify their suitability and completeness, to four other interviews. The third member of the research team, who did not participate in the coding activity, checked the clarity of each code, the extent to which they communicated a clear concept, and their relevance with the research questions. A more systematic coding process started for the rest of the interviews, on which two team members applied the list of codes on each relevant portion of data, working together and looking for consensus. As suggested by Braun & Clarke (2012), throughout the work, some codes were incorporated in a single code because of their similarity or their overlap. Other codes were modified in order to better describe and reflect the content of the data they included.

**Searching for Themes, Reviewing, Defining and Naming Themes.** These three phases involved working on identification of themes and attribution of a name. The analysis

of relationships between codes allowed us to collate and combine them around a common organising concept that is in fact captured by a theme or a sub-theme, i.e. a specific facet of the pattern reflected in the theme. Candidate themes and sub-themes were then tested in terms of their coherence with the extracts of the interviews and with the whole data set. The process ended with a clear vision of the different themes and sub-themes, to which a name was given, and of the content they wanted to convey. For these steps, only one person on the team was responsible for working on themes.

**Producing the Report.** The final stage of the thematic analysis was writing the report. In the case of this study, we wrote a draft of the results and discussion, which constituted the basis for the present article.

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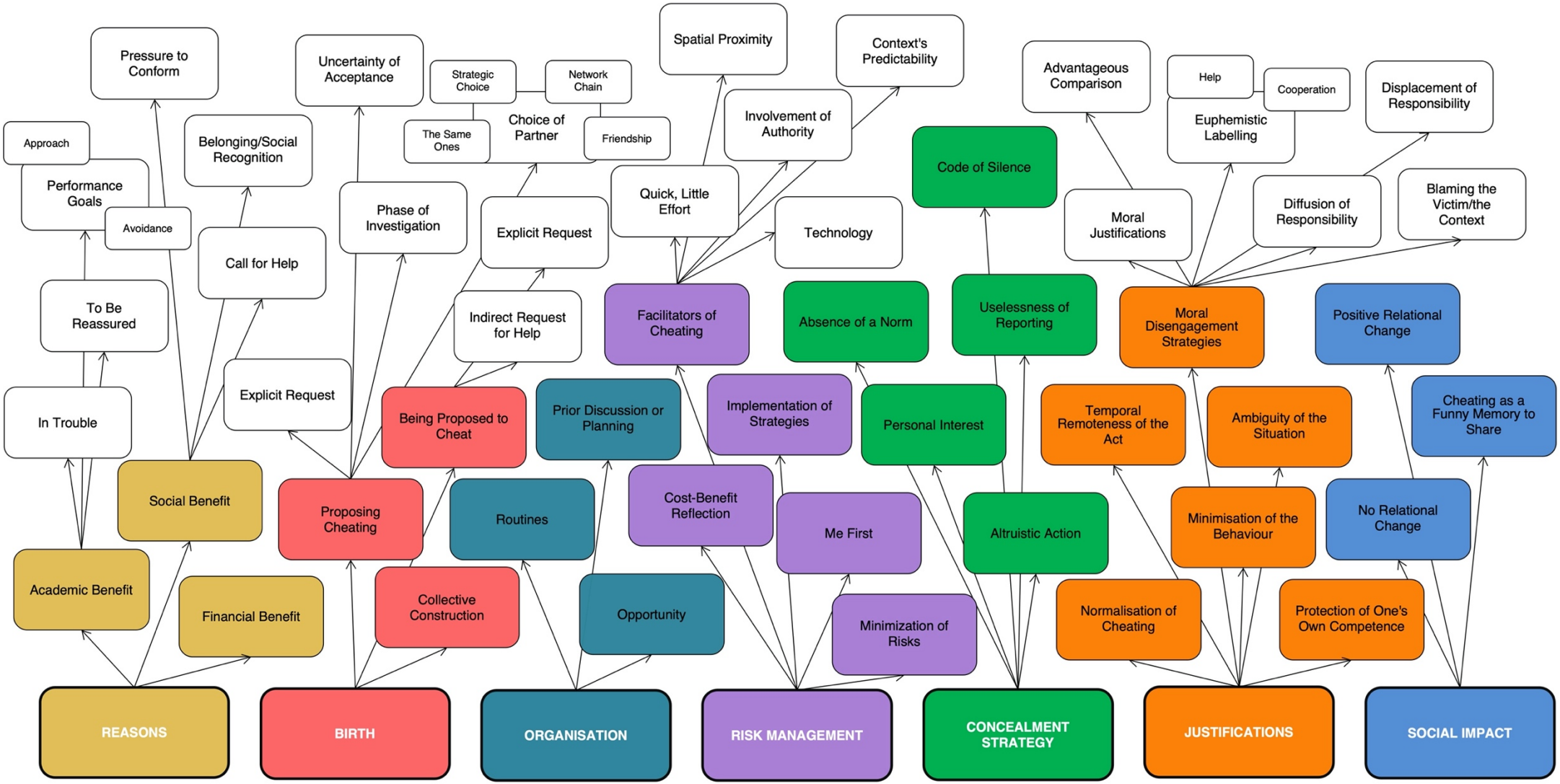
## Supplementary Material C

***Themes and Sub-themes Emerged from the Thematic Analysis***



## Supplementary Materials Chapter 3

### Supplementary Material A

#### *Exploratory Research Questions*

First, we explored whether collective cheating leads to a reduction, compared to individual cheating, in shame (RQ1) and whether perceived responsibility would capture a significant part of the variance shared between the kind of cheating experience and shame (RQ2). Secondly, we aimed to explore the possible emergence of reparation behaviour and intention associated with guilt. We tested whether a lower level of reparation intention and behaviour would emerge after the recalling of a collective (versus individual) cheating event (RQ3). Moreover, we explored whether guilt would be a mediator of interest in the relationship between the kind of cheating—individual or collective—and the reparation intention/behaviour (RQ4).

#### *Research Questions 1 and 2 (RQ1 and RQ2)*

**Overlap with Shame.** Although sharing common and often confounded dimensions, guilt and shame are distinct emotions. Shame involves a negative evaluation of the self—"I am a bad person"—, whereas guilt would focus on the negative evaluation of the specific behaviour (e.g., Lewis, 1971), even though they both are defined as moral (e.g., Tangney, 1991; Tangney & Dearing, 2002; Tangney et al., 2007) and a self-conscious (e.g., Niedenthal et al., 2009; Tangney et al., 2007) emotions. At the empirical level, beyond the high correlation often found between guilt and shame, in some studies a strong distinction was not supported (Kugler & Jones, 1992) and some factors analyses did not show separate factors (see Elison, 2005) or converged in factors where the adjective ‘guilty’ loaded higher with the shame factor compared to the guilt one (Harder & Zalma, 1990). Moreover, some of the differences often mentioned between shame and guilt, such as the fact that the two emotions arise from different types of events, are now being questioned (see Tangney, 1995). This

evidence shows how difficult it is sometimes to differentiate between these emotions on a conceptual level and, consequently, to express exactly whether one feels guilty or rather ashamed. Because of this confusion, although in Experiments 1 and 2 our focus was on guilt, we decided to include a measure of shame in these two experiments.

As mentioned in the main manuscript, as with guilt, we made the same assumptions for shame. We wanted to explore whether collective cheating leads to a reduction, compared to individual cheating, in shame (RQ1) and whether responsibility would account for a significant part of the variance shared between the kind of cheating and shame (RQ2), consistently with a mediation model.

***Research Questions 3 and 4 (RQ3 and RQ4)***

**The Action Readiness of Guilt.** Emotions can be understood as an emotional experience involving a set of components. Affect, i.e., the feeling associated with an emotion, is a major component, as is action readiness (Frijda, 1986), i.e., "the readiness to find and execute some action that can do something with or about the event and its affective value" (Frijda, 2016, p. 614). In the main text, we have focused on the feeling of guilt, but in Experiment 1, we also explored the behavioural consequences associated with guilt.

The literature on emotions has widely investigated the behavioural consequences of the experience of guilt (e.g., Carlsmith & Gross, 1969; Cryder et al., 2012; de Hooge et al., 2007; Ketelaar & Tung Au, 2003). Due to the awareness and sense of responsibility involved in the experience of guilt, this emotion has been found to drive action and, more specifically, reparation (e.g., Graton & Ric, 2017; Tangney, 1991). Experimental studies agreed on the presence of an association between guilt and the reparation intention (e.g., de Hooge et al., 2007; Graton & Ric, 2017; Ketelaar & Tung Au, 2003). Recently, a series of studies (Graton & Ric, 2017) highlighted that guilt (induced, not self-reported) promoted attention to existing means of reparation (Exp. 1) and rendered these means more positive (Exp. 3). This

behavioural consequence has also been documented by showing that prosocial behaviours (or intentions) are more likely to occur following the experience of guilt (e.g., Basil et al., 2006). In sum, as we hypothesize a decrease in the perception of personal responsibility and feeling of guilt in collective (versus individual) cheating experiences we may also expect that collective cheating will be more likely to mitigate individuals' desire to repair, compared to individual cheating.

In Experiment 1, we aimed to explore the possible emergence of reparation behaviour and intention associated with guilt. We studied whether a lower level of reparation intention and behaviour would emerge after the recalling of a collective (versus individual) cheating event (RQ3). Moreover, we tested if guilt would be a mediator of interest in the relationship between the kind of cheating and the reparation intention/behaviour (RQ4).

## *Experiment 1*

### Supplementary Measures.

***Shame.*** To assess shame, participants were told to report the extent they were feeling ashamed (e.g., Graton & Ric, 2017; Graton et al., 2016) with the following item: "To what extent do you feel ashamed?". Rating was made on a 7-point scale from 1 (not at all ashamed) to 7 (totally ashamed). The order of guilt and shame was randomized.

***Reparation Intention (Moral Character).*** Five subscales of the Moral Character Questionnaire (Furr et al., 2022) were employed in order to assess the participants' willingness to change on moral character, i.e. a reparation intention associated to the experience of guilt. All the items were adapted for the present experiment and, based on the example of Sun and Goodwin (2020), all the items started with "I want to…"—. The items were presented randomly. The General morality subscale was assessed by four items (e.g. "I want to be a good person"), Loyalty by three items (e.g., "I want to be loyal even when it's hard"), Honesty by three items (e.g., "I want to be a person who consistently tells the truth"),

Compassion by three items (e.g., "I want to be a person who cares a lot about helping other people"), and Respect by three items (e.g., "I want to be a respectful person"). Concerning the Loyalty subscale, one item was eliminated because of an error in the sentence which completely inverted to sense of it. The Cronbach's alpha for the 15 items was .95. The mean of these 15 items was computed and employed for the analysis. Ratings were made on the basis of the change-goal scale used by Sun and Goodwin (2020): -2 (Much less than I currently am), -1 (Less than I currently am), 0 (I do not want to change in this trait), +1 (More than I currently am), and +2 (Much more than I currently am).

***Reparation Behaviour (Engagement in Moral Associations).*** In order to explore the behavioural consequences associated to reparation resulting from the experience of guilt, we measured the willingness of participants to engage in organisations with moral purposes. To this, as a first step, we created eight associations, four with a moral purpose and four with a neutral purpose. In pre-test, we presented the associations with a name and a short description to $N = 35$ participants, who had to rate the association in terms of morality, interest and positivity as presented in Table 3; this allowed to select four associations for the present experiment. It is important to note that the two groups of associations scored significantly different on all three measures. Moral associations rated more moral ($M = 4.39$ ; $SD = .56$), compared to neutral associations ($M = 2.14$; $SD = .84$), $t(34) = 13.57$, $p < .001$, $d = 2.29$, more positive ($M = 4.53$; $SD = .52$) than neutral ($M = 2.66$; $SD = 1.04$), $t(34) = 10.31$, $p < .001$, $d = 1.74$) and more interesting ($M = 4.57$; $SD = .45$) than neutral ($M = 3.21$; $SD = .92$), $t(34) = 7.85$, $p < .001$, $d = 1.33$). Regarding the associations with moral purposes, we selected the two with the highest average on morality—*Food for All* and *Speak Up and Stop*—and, for the neutral associations, we selected the two that had high levels of interest and positivity—*Bird Science* and *Bike the World*.

**Table S1**

*Means and Standard Deviation for Moral Associations on Morality, Positivity, and Interest*

| | Morality | | Positivity | | Interest | |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Food for All, providing food to the people in need, all over the world[1] | 4.60 | 0.65 | 4.60 | 0.65 | 4.54 | 0.56 |
| Open your World, for the social integration of people with physical and mental disorders[1] | 4.29 | 0.83 | 4.68 | 0.59 | 4.60 | 0.65 |
| Children's Hope, giving children with cancer the opportunity to live their dreams[1] | 4.03 | 0.99 | 4.24 | 0.89 | 4.46 | 0.66 |
| Speak Up and Stop, helping victims of domestic violence[1] | 4.63 | 0.77 | 4.63 | 0.65 | 4.69 | 0.53 |
| Art International, for the development of the modern art around the world[2] | 2.09 | 1.11 | 2.43 | 1.20 | 3.14 | 1.24 |
| Rock the earth, for the promotion of rock 'n' roll, all over the world[2] | 1.63 | 0.88 | 2.29 | 1.25 | 2.66 | 1.26 |
| Bird Science, communicating the passion for birds and some curiosities about them[2] | 2.34 | 1.29 | 2.69 | 1.32 | 3.17 | 1.25 |
| Bike the World, sharing information and discovering other countries by bike[2] | 2.51 | 1.17 | 3.23 | 1.11 | 3.86 | 1.14 |

[1]Moral associations; [2]Neutral associations

In the present experiment, these four associations were presented to all participants, with their order randomized. Participants were asked to report their willingness to engage in each association by selecting one or more of these answers, increasingly engaging: a) I am not interested, b) I am interested in receiving an information brochure by e-mail [you will be asked for your email, at the end], c) I am interested in receiving regular information, from time to time, by e-mail [you will be asked for your e-mail at the end], d) I agree to be

contacted by phone for a 2-hour interview on the subject [you will be asked for your phone number at the end], e) I am interested in attending association meetings near my home [a registration form will be presented to you at the end]. We attributed 0 points if a) was selected, 1 point for b), 2 points for c), 3 points for d) and 4 points for e).

Based on this question, we compute the score of the proportion of moral engagement.

***Proportion of Moral Engagement.*** The proportion of moral engagement was computed dividing the engagement in moral associations (= sum of points related to the engagement in the two moral associations, between 0 and 20) by the total engagement in moral and in neutral associations. This proportion varied between 0 and 1. The means of the aggregated scores and correlations with all measures in Experiment 1 are presented in Table S2.

**Table S2**

*Means, Standard Deviation and Pearson Correlation between variables in Experiment 1*

| | *M* | *SD* | 1. | 2. | 3. | 4. |
|---|---|---|---|---|---|---|
| 1. Responsibility | 6.02 | 1.35 | | | | |
| 2. Guilt | 3.49 | 2.24 | .12*** | | | |
| 3. Shame | 3.4 | 2.2 | .12*** | .88*** | | |
| 4. Moral character | 0.85 | 0.64 | .09* | .27*** | .27*** | |
| 5. Proportion of moral engagement | 0.63 | 0.31 | -.01 | -.02 | -.07 | -.00 |

*Note.* ** indicates $p < .01$, *** indicates $p < .001$

**Research Questions Analysis.** To explore whether collective cheating leads to a reduction, compared to individual cheating, in shame (RQ1), a one-way ANOVA with planned comparisons was performed. Planned comparison were also used to test the additional hypothesis that expected low shame in the control condition compared to the two

cheating conditions. The independent variable was decomposed in two orthogonal contrasts. The first contrast, $X_{control}(0)$, $X_{collective}(-1)$, $X_{individual}(1)$, tested RQ1, and the second contrast tested the difference between the control condition and the cheating conditions, $X_{control}(-2)$, $X_{collective}$ (+1), $X_{individual}(+1)$ (e.g., Brauer & McClelland, 2005). If result of Shapiro-Wilk test showed a significant deviance from normality for one measure, Mann-Whitney test was conducted as a robustness check; results are showed in footnotes.

For *shame*, the contrast between collective cheating and individual cheating was marginally significant, Welch's $t(446.592) = 1.70$, $p = .090$, $d = 0.17$. The contrast between the control condition and the two experimental conditions—collective cheating and individual cheating ($M = 4.33$, $SD = 2.02$)—was significant, Welch's $t(808.806) = 15.50$, $p < .001$, $d = 2.14$.[14]

[14] Shapiro-Wilk test showed a significant deviance from normality for shame $W(837) = .85$, $p < .001$. A Mann-Whitney test was conducted as robustness check. Results indicated a marginally significant difference between the two experimental condition, $U(N_{collective} = 216, N_{individual} = 249) = 24504.00$, $z = 1.68$, $p = .093$, $r = .08$. The differences between the control group and the two cheating conditions was statistically significant, $U(N_{control} = 372, N_{cheatings} = 465) = 39316.00$, $z = 13.94$, $p < .001$, $r = .48$.

**Table S3**

*Means and Standard Deviation for Shame Score, Moral Character, and the Proportion of Moral Engagement*

| Measure | | Control Group | Collective Cheating | Individual Cheating |
|---|---|---|---|---|
| Shame | *M* | 2.24 | 4.16 | 4.48 |
| | *SD* | 1.84 | 2.07 | 1.97 |
| Moral Character | *M* | 0.82 | 0.93 | 0.83 |
| | *SD* | 0.64 | 0.68 | 0.59 |
| Proportion of moral engagement | *M* | 0.59 | 0.69 | 0.65 |
| | *SD* | 0.30 | 0.32 | 0.33 |

As for guilt, we were unable to test RQ2 with the three conditions. Indeed, the effect of our manipulation on responsibility and shame was not in the same direction, due to the unexpected position of the control condition between the two experimental conditions in the responsibility variable. Thus, a mediation analysis would not make sense.

To explore the research question regarding a possible increase of desire to reparation after the recalling of an individual cheating event than after the recalling of a collective one (RQ3), a one-way ANOVA with planned comparisons were performed.

For reparation intention (moral character), the contrast between collective cheating and individual cheating was not significant, Welch's $t(426.555) = 1.61$, $p = .11$, $d = .15$. The contrast between the control condition and the two experimental conditions ($M = 0.88$, $SD = 0.64$)—collective cheating and individual cheating—was not significant, Welch's $t(781.952) = 1.33$, $p = .18$, $d = .19$. The desire to change on moral character traits did not appear to differ across experimental conditions.

For proportion of moral engagement, the contrast between collective cheating and individual cheating was not significant, $t(480) = 0.91$, $p = .362$, $d = 0.11$. The contrast

between the control condition and the two experimental conditions ($M$ = .67, $SD$ = .32)—collective cheating and individual cheating—was significant, $t(480) = 2.79$, $p = 0.006$, $d = 0.51$.[15]

Given the absence of difference between the two cheating conditions in terms of reparation (intention and behaviour), we were unable to test the mediation hypothesis (RQ4).

**Discussion.** In relation to our first research questions, we found a marginally significant difference on shame according to the type of cheating. One the one hand, this result may reflect the confusion that participants experienced in identifying and expressing feelings of guilt and shame, as suggested in the introduction. On the other hand, this finding could be in line with the literature showing that both, shame and guilt could arise following moral transgression. Indeed, as Tangney wrote (1995, p. 1134) "Most types of events (e.g., lying, cheating, stealing, failing to help another, disobeying parents, etc.) were cited by some people in connection with feelings of shame and by other people in connection with guilt".

About the desire to change on moral character, the reparation intention, no difference was found across conditions. Regarding the reparation behaviour—the proportion of moral engagement—, we did not find any difference between collective and individual cheating. However, a difference was found on reparation behaviour between the control group and the two cheating conditions. The proportion of moral engagement appeared to be higher in cheating conditions compared to the control group. Following the recall to a cheating experience participants engaged more in moral associations. The reminder of a transgression,

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[15] Since a Shapiro-Wilk test showed a significant deviance from normality for proportion of moral engagement, $W(483) = .89$, $p < .001$, a Mann-Whitney test was conducted. Results indicated no difference between the collective cheating and the individual cheating conditions, $U(N_{collective} = 122, N_{individual} = 139) = 8100.00$, $z = .64$, $p = .521$, $r = .04$. The differences between the control group and the two cheating conditions was significant, $U(N_{control} = 222, N_{cheatings} = 261) = 24641.00$, $z = 2.88$, $p = .004$, $r = .13$.

whether individual or collective, led participants to show a greater desire to repair, what is in line with the literature on guilt following transgression and its behavioural consequence. However, despite this consistent result, we did not find any difference between individual and collective cheating in terms of desire to repair. For this reason, we have dropped this research question in the following studies.

***Experiment 2***

**Supplementary Measures.**

***Shame.*** The same 1-item measure as Experiment 1 was employed to assess shame. The means of and correlations of all measures in Experiment 2 are presented in Table S4.

**Table S4**

*Means, Standard Deviation and Pearson Correlation between Experiment 2 variables*

| | *M* | *SD* | 1. | 2. |
|---|---|---|---|---|
| 1. Responsibility | 6.32 | 1.26 | | |
| 2. Guilt | 4.13 | 2.04 | .32*** | |
| 3. Shame | 3.72 | 2.2 | .23*** | .85*** |

*Note.* *** indicates p < .001

**Research Questions Analysis.** A two-sample t-test and a mediation analysis were conducted in order to explore the hypotheses that collective cheating leads to a reduction, compared to individual cheating, in shame (RQ1). Moreover, we tested if responsibility would account for part of the variance shared between the kind of cheating and shame (RQ2).

Participants in the individual cheating condition ($M$ = 4.09, $SD$ = 2.18) reported significantly higher levels of shame compared to participants in the collective cheating

condition ($M$ = 3.38, $SD$ = 2.16), $t(766) = 4.51$, $p < .001$, $d = 0.33$[16]. These results showed a lower feeling of shame after a collective cheating experience compared to an individual one, a difference that did not reach the usual level for significance in Experiment 1.

we conducted a mediation analysis using PROCESS (Hayes, 2022) to test if responsibility could account for a significant portion of the variance shared in the relationship between the kind of cheating—individual vs. collective—and shame (cf. Figure 1). The overall mediation model was significant, $F(2, 763) = 24.80$, $p < .001$, $R^2 = .06$. A first model showed a significant effect of the type of cheating on shame, $b = 0.70$, $t(764) = 4.43$, $p < .001$ and a second model a significant effect of the type of cheating on responsibility—our mediator of interest, $b = 0.74$, $t(764) = 8.49$, $p < .001$. In a third model, where responsibility and the type of cheating were introduced as predictors of shame, results showed a significant effect of responsibility on shame, $b = 0.35$, $t(763) = 5.41$, $p < .001$ and that the type of cheating remained significant, $b = 0.44$, $t(763) = 2.72$, $p = .007$. The Sobel test showed a significant reduction in explained variance by our independent variable, $z = 4.76$, $p < .001$. These results showed that responsibility explained a significant part of variance shared between the type of cheating and shame.

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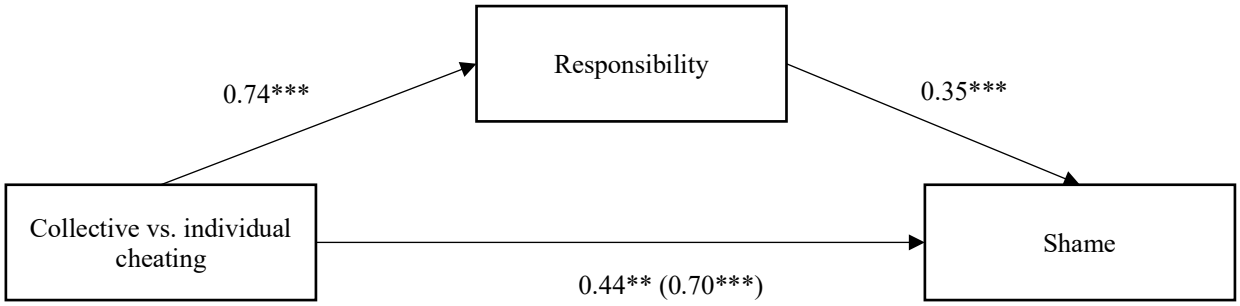
[16] The Shapiro-Wilk test showed a significant deviation from normality for shame, $W(768) = .88$, $p < .001$. A Mann-Whitney test was conducted as a robustness check. Results indicated that the difference between individual and collective cheating was significant, $U(N_{individual} = 374, N_{collective} = 394) = 60050.50$, $z = 4.50$ , $p < .001$, $r = .16$.

**Figure S1**

*Experiment 2: Effect of the Experimental Conditions (Individual vs. Collective Cheating) on Shame, with Responsibility as Mediator*




*Note*. All coefficients are unstandardized, and asterisks indicate significant paths (***p < .001; **p < .01).

**Discussion.** In Experiment 2, we found support to the two research questions related to shame. Indeed, we found a difference between collective and individual cheating in terms of shame: Participants reported that they felt less ashamed after recalling a collective cheating event that after an individual one. Interestingly, the mediation analysis showed that part of the variance shared in the relation between the type of cheating and shame could be accounted by responsibility, as for guilt. As mentioned in the previous discussion, shame and guilt can both be linked to the same type of event when talking about moral transgression (e.g., Tangney, 1995; Tangney et al., 2007), which would allow to explain the similarity of pattern in the results.

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## Supplementary Materials Chapter 4

### Supplementary Material A

### Table S1

*Multilevel Models of the Impact of the Extent of Collective Cheating on Perceived Cooperation*

| | Perceived Cooperation | | | | | |
|---|---|---|---|---|---|---|
| | Logical Skills | | Math Skills | | The Speed Game | |
| | Null model | Model 1 (H1) | Null model | Model 2 (H1) | Null model | Model 3 (H1) |
| Intercept | 5.99*** (0.11) | 5.93*** (0.11) | 5.66*** (0.14) | 5.64*** (0.15) | 6.21*** (0.10) | 6.21*** (0.11) |
| Extent of cheating | | 0.29 (0.15) | | 0.06 (0.14) | | -0.00 (0.05) |
| Variance (Intercept) | 0.49*** (0.13) | 0.45*** (0.12) | 0.78*** (0.21) | 0.76*** (0.22) | 0.34** (0.11) | .34** (0.11) |
| Variance (Residual) | 0.48*** (0.07) | 0.48*** (0.07) | 0.85*** (0.12) | 0.85*** (0.12) | 0.59*** (0.09) | 0.59*** (0.09) |
| ICC | 0.50 | | 0.48 | | 0.37 | |
| -2 Log Likelihood | 394.83 | 391.24 | 488.95 | 488.88 | 402.85 | 402.85 |
| AIC | 400.83 | 401.24 | 494.95 | 498.88 | 408.85 | 421.85 |

*Note.* *** $p < .001$; ** $p < .01$

**Table S2**

*Multilevel Models of the Impact of the Extent of Collective Cheating on Satisfaction*

| | Satisfaction | | | | | |
|---|---|---|---|---|---|---|
| | Logical Skills | | Math Skills | | The Speed Game | |
| | Null model | Model 4 (H2) | Null model | Model 5 (H2) | Null model | Model 6 (H2) |
| Intercept | 4.86*** (0.18) | 4.75*** (0.18) | 4.29*** (0.19) | 4.20*** (0.20) | 4.44*** (0.17) | 4.32*** (0.17) |
| Extent of cheating | | 0.53* (0.24) | | 0.19 (0.15) | | 0.15 (0.08) |
| Variance (Intercept) | 1.41*** (0.33) | 1.25*** (0.31) | 1.42*** (0.37) | 1.38*** (0.36) | 0.96*** (0.30) | 0.88** (0.29) |
| Variance (Residual) | 0.91*** (0.13) | 0.92*** (0.13) | 1.38*** (0.20) | 1.38*** (0.20) | 1.51*** (0.22) | 1.51*** (0.22) |
| ICC | 0.61 | | 0.51 | | 0.61 | |
| -2 Log Likelihood | 509.99 | 505.31 | 569.01 | 567.46 | 550.14 | 546.99 |
| AIC | 515.99 | 515.31 | 575.01 | 577.46 | 556.14 | 556.99 |

*Note.* *** $p < .001$; ** $p < .01$; * $p < .05$

## Supplementary Materials Chapter 5

### Supplementary Material A

### Table S1

*Original Pool of Items Developed for Study 1*

| Factor (theme) | Sub-factor (sub-themes) | Item | | *N* | *M* | *SD* |
|---|---|---|---|---|---|---|
| Reasons for Collective Cheating (12 items) | Academic Benefit | B1 | I cheated with the others to reassure myself (knowing what to expect in case I did not feel ready) | 271 | 3.72 | 1.80 |
| | | B2 | I cheated with the others to improve my grade or get a good grade | 272 | 4.98 | 1.52 |
| | | B3 | I cheated with the others to avoid a bad grade | 271 | 5.04 | 1.51 |
| | | B4 | I cheated with the others because I was in trouble, in a panic or someone else was in trouble | 271 | 4.26 | 1.63 |
| | Social Benefit | B5 | I cheated with the others to be part of the group and integrate myself | 273 | 2.01 | 1.41 |
| | | B6 | I cheated with the others to get recognition from others | 273 | 2.20 | 1.50 |
| | | B7 | I cheated with the others because others were pressuring me, and I felt compelled | 273 | 1.58 | 1.09 |
| | | B8 | I cheated with the others because I did not know | 273 | 2.52 | 1.58 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | how to say no, and I always helped others | | | |
| | | B9 | I cheated with the others because someone else asked me for help, they needed me | 272 | 4.56 | 1.48 |
| | Financial Benefit | B10 | I cheated with the others because I was paid to do it | 273 | 1.07 | 0.41 |
| | | B11 | I cheated with the others in exchange for money, for financial gain | 273 | 1.08 | 0.49 |
| | | B12 | I cheated with the others in exchange for benefits like favours, a snack, ... | 273 | 1.42 | 1.02 |
| Birth of Collective Cheating (9 items) | Collective Construction | N1 | The decision to cheat together was a collective one, with no one proposing more than another | 269 | 3.99 | 1.59 |
| | | N2 | The cheating was decided in the group in a tacit way | 268 | 3.49 | 1.66 |
| | | N3 | There was a kind of connivance, a secret agreement between us | 272 | 4.06 | 1.58 |
| | Proposing Cheating | N4 | I proposed the cheating explicitly | 270 | 3.15 | 1.69 |
| | | N5 | I chose my cheating partner strategically (always the same person(s), the one who was strong in the subject, my friends, ...) | 271 | 3.86 | 1.78 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | N6 | I investigated (by questioning the other person, by laughing about a possible cheating, ...) before proposing the cheating to see if the other party could have accepted | 272 | 1.96 | 1.32 |
| | Being Proposed to Cheat | N7 | I was asked very explicitly to cheat together | 273 | 3.81 | 1.74 |
| | | N8 | I was asked for help | 273 | 4.38 | 1.46 |
| | | N9 | I identified an indirect or subtle request for help, without the other party clearly asking me | 273 | 3.08 | 1.69 |
| Organisation of Collective Cheating (9 items) | Planning | O1 | The cheating was planned beforehand, among us | 273 | 3.42 | 1.69 |
| | | O2 | We decided beforehand the modalities of the cheating | 269 | 3.13 | 1.65 |
| | | O3 | We discussed beforehand to plan the what and how of the cheating | 273 | 3.25 | 1.71 |
| | Opportunity | O4 | The decision to cheat was made in the moment, as the opportunity presented itself | 273 | 4.19 | 1.48 |
| | | O5 | The decision to cheat was spontaneous, the conditions were favourable | 273 | 4.50 | 1.39 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | O6 | Cheating was not planned in advance | 268 | 3.49 | 1.58 |
| | Routine | O7 | Cheating in this way was a routine | 273 | 2.78 | 1.63 |
| | | O8 | Cheating and its procedure was always the same | 271 | 3.36 | 1.58 |
| | | O9 | This kind of cheating was frequent, we were used to it | 272 | 3.21 | 1.64 |
| Risk Management (15 items) | Implementation of Strategies | R1 | We put strategies in place to avoid being caught | 271 | 3.96 | 1.52 |
| | | R2 | We were careful to act strategically | 272 | 4.52 | 1.30 |
| | | R3 | Aware of the consequences, we acted in ways that minimized the risks of being caught | 271 | 4.77 | 1.15 |
| | Minimization of Risks | R4 | The risks of being caught were minimal | 272 | 3.73 | 1.33 |
| | | R5 | It was impossible that teachers would notice our cheating | 271 | 2.97 | 1.31 |
| | | R6 | We did not risk much by cheating as we did | 272 | 3.68 | 1.43 |
| | Facilitators of Cheating | R7 | Some contextual factors made cheating easy (use of technology/computers, spatial proximity to each other, position in the classroom, etc.) | 271 | 5.08 | 1.20 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | R8 | The context was predictable, which made cheating easier | 269 | 4.58 | 1.31 |
| | | R9 | Cheating was done very quickly, requiring little effort | 271 | 4.37 | 1.31 |
| | Me First | R10 | I agreed to help one or more other people cheat only if I had finished my work first (exam, homework, etc.) | 269 | 3.81 | 1.51 |
| | | R11 | I always made sure I finished my work before helping others | 267 | 3.87 | 1.48 |
| | | R12 | In order not to put my performance in danger, I did my work first | 268 | 4.25 | 1.42 |
| | Cost-Benefit Reflection | R13 | I was willing to take risks because the benefits were substantial | 270 | 3.79 | 1.44 |
| | | R14 | I participated in a cheating only if the benefits were greater than the risks taken | 267 | 3.75 | 1.52 |
| | | R15 | What we gained by cheating was greater than the risks we took | 270 | 3.78 | 1.50 |
| Concealment Strategy (18 items) | Altruistic Action | D1 | It was unlikely that the cheating would be reported because of its altruistic nature | 263 | 4.22 | 1.42 |
| | | D2 | It was unlikely that the cheating would be | 260 | 4.08 | 1.44 |

| | | | | | |
|---|---|---|---|---|---|
| | | | reported because it was so generous | | |
| | | D3 | It was unlikely that the cheating would be reported because it was about helping and supporting each other | 269 | 4.99 | 1.15 |
| | Code of Silence | D4 | It was unlikely that cheating would be reported because we were loyal and standing by each other | 267 | 4.92 | 1.13 |
| | | D5 | It was unlikely that the cheating would be reported because there was a certain pressure in the group to remain silent | 270 | 2.90 | 1.61 |
| | | D6 | It was unlikely that the cheating would be reported for fear of reprisals from the group | 270 | 3.44 | 1.73 |
| | | D7 | Nobody reported because we trusted each other | 268 | 4.95 | 1.19 |
| | | D8 | Nobody reported and betrayed the trust among us | 267 | 4.80 | 1.29 |
| | | D9 | I never imagined that someone could report the cheating because there was trust between us | 269 | 4.93 | 1.22 |
| | Personal Interest | D10 | It was unlikely that the cheating would be reported because each | 269 | 4.79 | 1.32 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | person wanted to protect their personal interest | | | |
| | | D11 | It was unlikely that the cheating would be reported because everyone had something to lose | 270 | 4.55 | 1.43 |
| | | D12 | Everyone was involved and therefore no one would have reported, we were all in the same boat | 267 | 4.41 | 1.52 |
| | Absence of a Norm | D13 | Reporting was never considered, the question did not arise | 269 | 5.16 | 1.11 |
| | | D14 | Nobody ever reported such a situation | 269 | 4.99 | 1.39 |
| | | D15 | Reporting was simply improbable, never seen before | 269 | 4.64 | 1.46 |
| | Uselessness of Reporting | D16 | Reporting would have been useless, nobody would have done anything | 268 | 3.36 | 1.68 |
| | | D17 | Reporting the cheating would have been useless | 267 | 3.98 | 1.64 |
| | | D18 | The person to whom the reporting could have been made would not have reacted and would not have said anything | 256 | 2.74 | 1.55 |
| Justifications (37 items) | Normalisation of Cheating | J1 | Everyone did it in my class, cheating was normal | 270 | 3.97 | 1.41 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | J2 | Cheating was a kind of collective routine, a frequent behaviour of a good part of the class | 270 | 3.55 | 1.64 |
| | | J3 | There was a certain tolerance for cheating, nobody said anything | 268 | 3.91 | 1.45 |
| | Minimisation of the Behaviour | J4 | It has happened to me very rarely to cheat | 271 | 4.09 | 1.42 |
| | | J5 | It was a matter of asking or sharing only one or two answers | 272 | 3.77 | 1.48 |
| | | J6 | Cheating did not change much | 271 | 3.50 | 1.28 |
| | Temporal Remoteness of the Act | J7 | That was a long time ago, now I have grown up | 272 | 4.44 | 1.36 |
| | | J8 | Today I would not do it anymore | 267 | 4.06 | 1.53 |
| | | J9 | At that time, we wanted to have fun, there was lightness | 269 | 3.57 | 1.55 |
| | Protection of One's Own Competence | J10 | I was particularly competent in a certain domain, the others asked for help | 269 | 3.88 | 1.54 |
| | | J11 | Others asked to cheat because I knew how to do it and could pass on the answers or the assignment | 266 | 3.55 | 1.58 |
| | | J12 | Cheating did not change anything, I had a good average | 267 | 4.25 | 1.39 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | J13 | We were smart, we deserved our grade regardless of the cheating | 263 | 3.77 | 1.42 |
| | Ambiguity of the Situation | J14 | The situation was ambiguous | 258 | 2.66 | 1.33 |
| | | J15 | The rules were not clear at that moment | 268 | 2.25 | 1.16 |
| | | J16 | The situation was confusing, we did not know what we could do or not to do | 266 | 2.24 | 1.25 |
| | Moral Justifications | J17 | I did it because others needed me, it was not for me | 271 | 3.24 | 1.55 |
| | | J18 | I did it to support classmates who were in trouble | 272 | 4.15 | 1.44 |
| | | J19 | I did it for others, to help them out | 269 | 3.96 | 1.47 |
| | Blaming the Victim/the Context | J20 | We cheated because the teacher was incompetent | 269 | 3.00 | 1.54 |
| | | J21 | We cheated because the subject or exam was too difficult | 270 | 3.77 | 1.44 |
| | | J22 | The system gave us the opportunity to cheat | 271 | 4.63 | 1.18 |
| | Euphemistic Labelling | J23 | It was more collaboration or communication | 272 | 4.61 | 1.29 |
| | | J24 | It was more like helping or mutual aid | 271 | 4.83 | 1.12 |
| | | J25 | It was more like circumvent the rules than cheating | 270 | 3.06 | 1.49 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Displacement of Responsibility | J26 | It was not my responsibility, I followed the instructions of others (classmates, teacher, etc.) | 271 | 2.19 | 1.22 |
| | | J27 | I did what others told me to do (classmates, teacher, etc.), it was not my initiative or decision | 271 | 2.52 | 1.42 |
| | | J28 | I did what others proposed and/or wanted | 266 | 3.00 | 1.42 |
| | | J29 | I was not really the organizer of the cheating | 269 | 4.16 | 1.32 |
| | | J30 | It was not my idea, I followed the others | 267 | 3.24 | 1.50 |
| | | J31 | It was the others who always asked me for help | 270 | 3.17 | 1.43 |
| | Diffusion of responsibility | J32 | We were in the same boat, equally responsible | 271 | 4.61 | 1.21 |
| | | J33 | There was no one more responsible than another | 268 | 4.38 | 1.41 |
| | | J34 | Everyone was somewhat responsible in this story | 271 | 4.64 | 1.16 |
| | Advantageous Comparison | J35 | Compared to what others did, what we did was not much | 270 | 4.04 | 1.36 |
| | | J36 | We never cheated like others did | 261 | 3.39 | 1.55 |
| | | J37 | Our cheating was small compared to other much serious stories | 268 | 4.58 | 1.22 |
| Social Impact of | No Relational Change | I1 | These events had no impact on our relationship | 271 | 4.20 | 1.37 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Collective Cheating (9 items) | | I2 | After these events, we just did not talk about it anymore, nothing changed | 269 | 3.62 | 1.53 |
| | | I3 | Our relationship stayed the same, our bond did not change | 270 | 4.27 | 1.42 |
| | Positive Relational Change | I4 | These events strengthened the bonds among group members | 268 | 3.89 | 1.42 |
| | | I5 | These events have brought only positive things to our relationship | 265 | 4.11 | 1.33 |
| | | I6 | These events improved the relationship among group members | 269 | 3.70 | 1.38 |
| | Cheating as a Funny Memory to Share | I7 | We still remember these episodes with amusement | 270 | 4.49 | 1.50 |
| | | I8 | These events are fun memories to share | 271 | 4.82 | 1.24 |
| | | I9 | Even today, these episodes bind us, and we remember them when we get together | 268 | 3.77 | 1.61 |

**Table S2**

*Inter-Factors Correlations*

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. |
|---|---|---|---|---|---|---|---|
| 1. Reasons | | | | | | | |
| 2. Birth | .38*** | | | | | | |
| 3. Organisation (planning) | .16* | .29** | | | | | |
| 4. Organisation (routine) | .23** | .55*** | .23** | | | | |
| 5. Risk Management | -.03 | .19 | .09 | .20* | | | |
| 6. Concealment Strategies | -.05 | .27* | .09 | .11 | -.03 | | |
| 7. Justifications | -.46*** | -.23* | -.14* | -.06 | .06 | .09 | |
| 8. Social Impact | .10 | .55*** | .22** | .27** | .08 | .14* | .21** |

*Note*. *** $p < .001$; ** $p < .01$; * $p < .05$

**Supplementary Material B**

**Table S1**

*Means, Standard Deviation, Reliability and Pearson Correlations between Measures of the Culture of Collective Cheating, Moral Disengagement, Guilt, Responsibility and Acceptance of Cheating for Protagonists (N = 438)*

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. |
|---|---|---|---|---|---|---|---|
| 1. CCS (Culture of Collective Cheating) | | | | | | | |
| 2. Moral Disengagement (about cheating) | .35** | | | | | | |
| 3. Academic Moral Disengagement | .32** | .89** | | | | | |
| 4. Guilt | -.14** | -.21** | -.17** | | | | |
| 5. Responsibility | .02 | -.18** | -.17** | .38** | | | |
| 6. Acceptance of Cheating | .24** | .56** | .51** | -.24** | -.16** | | |
| 7. Cheating Behaviour | .32** | .67** | .72** | -.10* | -.12* | .51** | |
| 8. Acceptance of Collective Cheating | .33** | .72** | .73** | -.18** | -.16** | .82** | .91** |

*Note.* ** $p < .01$; * $p < .05$

**Table S2**

*Means, Standard Deviation, Reliability and Pearson Correlations between Measures of the Culture of Collective Cheating, Moral Disengagement, Guilt, Responsibility and Acceptance of Cheating for Witnesses (N = 399)*

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. |
|---|---|---|---|---|---|---|---|
| 1. CCS (Culture of Collective Cheating) | | | | | | | |
| 2. Moral Disengagement (about cheating) | .14** | | | | | | |
| 3. Academic Moral Disengagement | .15** | .86** | | | | | |
| 4. Guilt | -.00 | -.02 | .05 | | | | |
| 5. Responsibility | .04 | -.01 | .01 | .48** | | | |
| 6. Acceptance of Cheating | .07 | .50** | .52** | -.14** | -.00 | | |
| 7. Cheating Behaviour | .16** | .71** | .75** | .13** | .03 | .47** | |
| 8. Acceptance of Collective Cheating | .14** | .71** | .75** | .01 | .02 | .83** | .88** |

*Note.* ** $p < .01$