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## Co-Authorship: Exploitation and Collaboration (With Students)

### Issue of Co-Authorship

Visibility is the measure of authority in science. Promotion in science still primarily depends on individual work (bachelor's thesis, master's thesis, doctoral dissertation, accomplishments for qualifying as an assistant professor and professor). In turn, the decisions on the funding of research depend, to a major degree, on the number of publications (productivity of a given individual) and quotations (utility of publications for other researchers). The paper of a single author is signed by a person responsible for the whole. Such person can be contacted and asked about the content of the work. In turn, in papers with multiple authors, the co-authors can say little about the whole work or may only have a guest performance in a given discipline. Marek Kwiek (2019a) claims that science is measured and assessed quantitatively. It is mainly the authorship that is measured and assessed: its occurrence in time (productivity) and place (prestige of a location) (Kwiek 2019a). It has become a commodity because: a) it became a measure of the contribution of scientists' work, b) it translates to the possibility of funding research according to the rules of prestige and c) it has utility value as it allows other researchers to refer to the previous research results. The problem of co-authorship is inseparably linked to the issue of commodification. Additionally, it also reveals problems of division of labour in the hierarchically organised structures of universities. It is not easy to start to collaborate: in spite of it being the advantageous mode of work organisation, yet it is not the default one. Pia Hurmelinna-Laukkanen and her team (2019) show that at the beginning of a collaboration, certain costs, known as transaction costs, must be incurred. They are related to the establishment of cooperation (selection of persons and modes of communication), management (determination of a schedule of meetings and division of tasks) and affective labour, i.e. effort made

to make people with diverse motivation get on together (cf. Hardt 2012). Collaboration also requires substance-related determinations, i.e. linguistic, terminological and methodological. It is quite difficult and that is why some find it easier to rely on friends than to start collaboration from scratch – especially with students, who are the source of additional uncertainty. That is why the issue of co-authorship (as a process of collaboration that ends with a publication) is going to be analysed from the perspective pivotal for a university, i.e. taking into account students. The perspective including new members of a team is essential – even though interactions in a group usually take place on a small scale, they refer to the reproduction of the organisational culture of the university and its disciplinary sub-cultures among the subsequent generations of researchers. Here, we are dealing with organisational cultures and sub-cultures understood as a set of standards and beliefs about people, values and practices/artefacts significant in a given organisation which, to a degree, embody these standards and values (Jeran, Basińska, 2020). Hitherto studies have shown that these are the young scientists who – irrespective of the discipline – experience more negative effects of collaboration than the more experienced ones (Tsai *et al.* 2016).

The purpose of the paper is to identify such organisational solutions for research collaboration with students that are ethical from the standpoint of future article co-authorship and advantageous to both students and research and teaching staff. The unequal status of participants in research leaves room for misunderstandings and abuses, such as omitting a student's contribution or removing them as the publication's primary author.. Exploitation, i.e. reaping the fruit of somebody else's labour, does not have to consist in brutal relegation from the group of co-authors. Students are not always aware of the scale of assistance they have provided with research, so they do not expect such recognition. Therefore, it can be challenging to determine how much of a student's visibility among the co-authors of an article results from their emancipation and how much is the result of exploitation or, on the other hand, the generosity of more senior colleagues. The students' participation in research teams is related to their going beyond the ordinary activity during classes, so the relations may be informal or, on the contrary, such participation may be planned as part of a project designed in this respect (Deesomsak *et al.* 2014). Although involvement in research and publishing are separate areas of scientific activity (Hurmelinna-Laukkanen *et al.* 2019), it would be difficult for students to publish without participating in research collaborations.

Publications that examine the background of multi-authored articles are limited to descriptions of potential pathologies related to the authorship of research papers (e.g. Naezer, Benschop, van den Brink 2019; Sikes 2009), struggles for ethical standards (Goodyear, Crego, Johnston 1992; Min 2019) and the conditions of doctoral student-supervisor relationships (Brabazon 2016; Costa, Gatz 1992). The significance of linking research with teaching at the university is upheld (Robertson 2007; Tight 2016), even though the descriptions of the ways portraying the collaboration with students as part of jointly carried out and published studies are missing

(Mercer-Mapstone *et al.* 2017). Relationships that account for the text-creation process in such collaborations are typically restricted to scenarios in which the research methodology was assigned to students without their input. Ethnographic studies (Szwabowski, Wężniewska, 2017) and analyses conducted in the field of action research (Červinková 2013) have special merits and are particularly sensitive to the communication nuances in the collaboration of unequal partners.

The meanders of political economy behind the valuation of publications (Bruno 2014; Szadkowski 2015) are of interest to students if they consider joining the research community, through doctoral studies. Becoming a co-author of a publication during the first or second degree can give you an edge over peers and attest to your subject-matter expertise. This is primarily due to lengthy preparation time for such publications. There is not enough time for the publication of papers, especially during three- and two-year studies, which the most ambitious students intertwine with additional travel grants. Examples of successful instances of such collaboration derive from student academic circles (e.g. Bornowska, Jendza, Zamojski 2009) and social movements (e.g. Mason-Deese *et al.* 2018), and sporadically as an effect of facultative courses (Kowzan *et al.* 2018), distanced in time. Usually, even collaboration as part of a diploma seminar does not stand the test of time and after the defence of the diploma thesis, the graduates find it hard to transform the results of their academic accomplishments into an academic paper.

In some disciplines, the possibility of finding students, also doctoral students, among the co-authors of publications may be difficult due to the still small number of research conducted in teams. However, it should be assumed that either the quantity of research of this type is changing or the hitherto research practice has started to be seen as collective effort, because the number of single author papers from all disciplines is dropping (Ductor 2015), while the number of co-authors is on the rise (Geminiani *et al.* 2014). For example, in the social work 'co-authorship became a standard in 2002' (Victor *et al.* 2017: 2201), i.e. the median of the number of authors of papers from eighty leading journals of the discipline grew to two. In some disciplines, the phenomenon results from an extensive background, for example laboratory, which the research requires. It may also be a derivative of the methodology of a given project, because analysis of large sets of data may demand engagement of more persons. Increase in the number of co-authors may be related to the fact that the possibility of work on some databases sometimes depends on the inclusion of authors of such bases in the group of co-authors of subsequent studies. It should be remembered that the persons whose work contribution was not sufficient for considering them co-authors of a paper may be labelled as contributors or collaborators. The significance of their contribution may also be described in the acknowledgements. These more or less formal acknowledgements also tend to transform into an area of disputes (Youte, Bozeman, 2016).

It is interesting to note that the practice of one discipline (such as the presence of an owner of a database among the co-authors) may be outrageous from the perspective of another discipline. However, it must be remembered that the signifi-

cance of the sole process of writing an academic paper in research is diversified. For example: the process of creation of a paper may be easily considered a part of the research process in the humanities and social sciences. In the course of preparation of a cohesive text, changes may happen in the assessment of what was accomplished during the stage of studies. In result, the process of writing in these disciplines is usually longer than in experimental sciences, where a paper may have the form of a technical report on the work performed collectively.

Also on the level of a single research team, the criteria of adding the first co-author of a publication may differ from the criteria fulfilled by the subsequent ones. Differentiation of the contribution of subsequent authors may be a simple criterion according to which a team determines the position of a given person on the list of authors. The criteria of co-authorship may also be less rigid when the number of authors exceeds three because in the case of quoting, every subsequent author becomes an addition to the first one in the form of *et al.* (meaning: and others). In such case, co-authorship may offer space for hospitality, for example adding persons who did not fulfil some of the guidelines of co-authorship (Shaw 2011) in a given publication, but have good prospects for significant contribution in the next publication. Senior researchers allow students to put their names on the first positions in co-authored papers more often than junior researchers, yet the students appreciate the contribution of employees higher than the employees themselves (Costa, Gatz, 1992). Contribution of two persons to teamwork may be sufficiently significant for some to decide to list them as the first co-authors (Moustafa, 2016). This also means levelling their status in the databases, even though it visually does not affect the recognised sequence of authors. It is worth noting that insofar as the perspective of the editors a journal may be limited to a single paper of a given issue, the researchers themselves may think in series of papers, especially when their work is ordered by the schedule of externally funded research.

However, it is worth accounting for the fact that the authors are capable of going beyond the customary standards. Thus, co-authors who are not human have also been added. The history of science is familiar with cases of adding a cat, a dog, a hamster, as well as three Bonobo monkeys (Erren *et al.* 2017). A child may also be given co-authorship (Min 2019). Nevertheless, it seems that nobody should be awarded in this way – journals more and more frequently stipulate that they do not accept gift authorship and commissioning other persons with the task of describing results of own studies (the so-called ghost authorship). Yet simultaneously, the researchers are encouraged to reveal any impact on their work – from funding to contribution of third parties.

Issues related to co-authorship are full of ethical dilemmas, especially when they also refer to the relations with students (Goodyear, Crego, Johnston 1992). Also students are looking at the settlement of such issues, especially when they are a part of the picture. Whether such settlements are deemed just may become of key importance for the course of their academic careers. On the other hand, disputes related to co-authorship frighten the scientists (Smith *et al.* 2020), thence the fear of being

accused of exploitation may by itself prevent the researchers from writing together with the students.

If it is assumed, following Marek Kwiek (2019b), that a characteristic feature of the Polish system of tertiary education is overburdening the researchers with didactics (cf. also Kowzan, Zielińska 2016), then the individual strategies of coping with such burden by the academics could entail inclusion of students in the research process, especially in the context of increasing demands pertaining to the productivity of researchers. The classification of difficulties in combining didactics with research will be accompanied by descriptions of possible variants in this respect.

### Ethical Standards

It is worth noting the rate of growth of the number of possibilities of putting the co-authors of a given publication in order because it is faster than exponential. For two authors, there are two possibilities of ordering on the list, for three – six possibilities while for four, twenty-four possibilities. In the case of larger teams, standardisation in the form of an alphabetical order, even if it refers to the sequence of surnames from the second to the penultimate<sup>1</sup>, significantly reduces the possibility of putting the list of co-authors in order. Every rule is unjust from the point of recognisability that the researchers are striving for. The alphabetical order results in the fact that the persons whose surnames start with the first letters of the alphabet gain recognisability. Awareness of the consequences of arranging the authors in a specific sequence influences the quality of collaboration at a given project (Kadel, Walter, 2015). Determining the sequence on the basis of the size of the contribution produces more dense networks of collaboration than in the case of an alphabetical order, and – what is more – leads to a higher number of publications (Ackerman, Brânzei 2017). In the case of collaboration among people with unequal potential, i.e. students and employees, the relative contribution of all researchers should be taken into account, even though the process-oriented attempts to systematise this approach, result in complicated procedures (Maurer, 2017).

The standards are usually local, i.e. they do not encompass all disciplines. They are embedded in individual disciplines, scientific associations or apply to a given journal. The most frequent points of reference for multiple areas are the recommendations pertaining to medical papers. The International Committee of Medical Journal Editors (ICMJE) suggests that issues of authorship should be settled on the basis of four joint criteria:

1. substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. drafting the work or revising it critically for important intellectual content; AND

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<sup>1</sup> In some disciplines and milieus, the last place is assigned for heads of teams.

3. final approval of the version to be published; AND
4. In addition to being accountable for the parts of the work he or she has done, an author should be able to identify which co-authors are responsible for specific other parts of the work. The criteria are not intended for use as a means to disqualify colleagues from authorship who otherwise meet authorship criteria by denying them the opportunity to meet criterion #s 2 or 3. Therefore, all individuals who meet the first criterion should have the opportunity to participate in the review, drafting, and final approval of the manuscript (ICMJE 2019: 2, original text).

The guidelines of the American Psychological Association (APA) (2020) which are a point of reference for the social sciences, also stress the necessary participation of the author at the beginning, i.e. drafting the study, in the middle, i.e. writing the paper, and at the end, i.e. approving the paper for publication. In principle, this is about participation in the work effort and in the process of making decisions. At the same time, the APA guidelines clearly specify that in the doctoral thesis, the PhD student should be the first author. The guidelines for evaluating the relative importance of student contributions refer to interpretative papers that attempt to put them into practice (Fisher 2017) which – apart from clarifying that at the pre-doctoral stage, collaboration of students and academics has the nature of apprenticeship – is eventually reduced to the analysis of specific cases-precedents (Fine, Kurdek, 2010).

The above criteria are published as guidelines for people who are trying to publish an academic paper and have become a standard, as they are applicable in numerous journals<sup>2</sup>. In turn, from the researchers' perspective, these are only recommendations as they do not originate from practice. The practice differs from the postulates (Shapiro 1994, Shaw 2011). That is why papers specifying solutions worth popularising from the point of view of the editors of a journal use the term responsible authorship (Horner, Minifie 2011; Moffatt 2011). The issue of identification of co-authors is supplemented with the criteria for selecting the main author.

It is not possible to clearly conclude who was doing what based on the mere sequence of surnames on the list of authors. Editors of journals do not usually interfere with the provided sequence, as it is the liability of the persons who put the paper together and not those who publish it. Following the methodological anarchists, it may be assumed that 'anything goes' (Feyerabend 1993) until something starts to depend on such sequence and the co-authors start to demand changes in what was published. Claims to co-authorship or to the position of the main, i.e. the first author, may result from the fact that a given paper may be used by them to win a grant, social standing, acknowledgement of authorship of a concept or as a mode of counting citations (citing a paper where one is not the main author is not always treated as self-quoting).

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<sup>2</sup> Unification of standards takes place when the journals become members of the Committee on Publication Ethics (COPE). This is an organisation that settles disputable issues.



Leaving aside for a moment the problem of the struggle for the visibility of researchers' names due to competition for limited research funds, it is worth considering what else a standardised signing of academic papers can serve. Appearance of a given surname at a specific position on a list of co-authors could be a signal as to what aspect of a study is to be discussed with a specific person. Yet methodologies vary and even a person handling statistical issues does not have a specific position on the list. Apart from it, many journals have introduced an institution of a corresponding author, who is responsible for contacts with the editors and handles any correspondence related to the published paper.

The problem of a properly ordered list of co-authors may also be viewed as an issue of reliability of research as such. As a community of researchers, we (and the editors of journals in particular) do not want the academic papers to be produced by unidentified entities, potentially entangled in conflicts of interests. The rank of these fears is attested by the fact that it is often expected or straightforwardly required from the authors to reveal the sources of financing. Hence the instructions demanding care to reveal the contribution of all collaborating persons (Sauermann, Haeussler 2017). This reduces the risk of a ghost author, i.e. a person with unspecified qualifications, affiliation and motivation who wrote a paper at the commission of the nominal author. Disclosure of the work of all persons is beneficial for the students, because if they participate in an initial part of a study, then – in line with the guidelines of ICMJE and APA – they should have the possibility of participating and making contribution to the further course of the project.

### Barriers in Collaboration

A variation of the credibility issue is the readers having trouble imagining how co-authors work together, in particular the degree to which the authors are ready to accept responsibility for the entire content presented by them. In some cases, particularly when there are multiple co-authors and volunteers with varying levels of identification in citizen science research, a single contributor may not be able to view the whole project. Ignoring an important, but borderline case of insufficient competence to understand one's role as a co-author, the main barrier to understanding the whole can be considered the size of the group of co-authors. The manageable number of co-authors depends on the communication and collaboration mode adopted by the team.

It should be noted that situations in which co-authors communicate with a single person responsible for the entire process are fundamentally different from situations in which everyone communicates with everyone else (cf. Fig. No. 1). It may be said that the second case, i.e. collaboration requiring intense communication demands greater 'capacity' for the processes taking place within a group. Hence, I categorize joint work into three types (Amici and Bietti 2015; Kowzan 2018; Pollard 2005; Zomorrodian 2011): coordination, cooperation, and collaboration be-

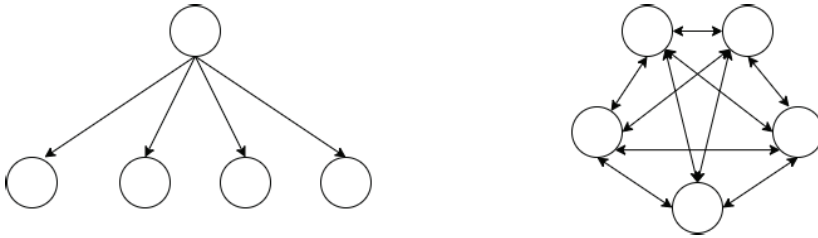


Fig. 1. Variants of communication in a group. Extreme cases due to the multiplicity of messages. The circles symbolise cooperating people, the arrows – messages, and the double-sided arrows – the exchange of messages

Source: authors' own study.

tween lecturers and students who are co-authors of an academic text<sup>3</sup>. The diversity of pedagogical forms of classes where such joint work could occur (e.g., seminars or lectures) is not discussed here, as this issue was addressed in a separate paper (Kowzan 2017).

In the case of coordination, the work on the entire study and publication is planned in advance and the tasks are distributed and assigned to individuals (cf. Fig. No. 2). Individuals' work is essentially separate, so it does not affect the work of others. The coordinator takes care of the added value, resulting from putting together individual efforts into a cohesive whole. This function is usually performed by the lecturer, while individual tasks are assigned to the students. This is a relatively easy model for joint work, especially due to the fact that student contributions may become an element of their credit for the course. As researchers, we may be interested in coordination when a part of a research process is, on the one hand, too laborious and requires the involvement of many people, and at the same time is sufficiently educational to offer an important didactic experience for the students. For them, it is a legible form of work as in principle it does not differ from what they experience as part of regular classes. Even a vague prospect of becoming co-authors of an academic paper is a welcome bonus at the end of a course. However, students do not make a significant additional effort for the sake of accomplishing this goal.

<sup>3</sup> The division of joint work into collaboration, cooperation and coordination is present in management sciences (Thomson, Perry 2006). Its application has not been found in any of the hitherto studies pertaining to collaboration in science. Epistemological studies ignore the relations of power resulting from hierarchy (cf. Andersen 2016), socio-metric studies focus on products of cooperation, while ethnographic studies which could deliver examples for this analysis remain embedded in the material specific of a given discipline. The description of collaboration, cooperation and coordination is inspired by the PAR current studies, where the ethical issues focus on forms of collaboration among the co-researchers, exploitation of knowledge and institutional requirement of depriving the colleagues of the possibility of co-authorship of a dissertation (Klocker 2012)



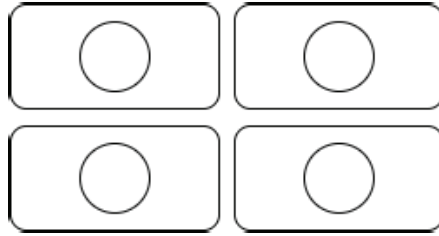


Fig. 2. Coordination: territory parcelling. The circles symbolise people, the rectangles separate tasks for which a given team member is responsible.

Source: authors' own study.

The issue is their participation in the research process design, which is a criterion for recognizing their contribution as co-authors of the paper. In some cases, it may be possible for students to design research as part of classes and discuss methodological issues. This is consistent with the guidelines, but takes time to complete the process. It is definitely easier to set the research goal before the start of classes, to narrow down the methodological problems of the research to specific issues – important, yet not decisive for the fate of the project. In general, there is no certainty as to the research competence of the students. It is known that it is rather diversified. They are usually entrusted with the simplest tasks, leaving open the possibilities of the advanced level. It may be assumed that the basic requirement is data collection. Their quality tends to be diverse, yet the quantity allows for omitting weaker samples from the analyses. Weaker samples, in turn, often prove useful for didactic purposes to discuss research problems.

It seems that inclusion of students in a group of co-authors of a study is often determined by their participation in the analysis of the compiled material. What is created at this stage of the work can be used as the raw material, i.e. a fragment of a raw version of the paper. While the process of collecting research material could be treated as coordination of individual efforts, in the case of analysis, things get complicated. Students can analyse the entire compiled material or only the portion they gathered. When research is a priority, coordinators will want as much work as possible to be done together, i.e. all the participating students will analyse the entire material. The contribution of individual people in such a variant may start to diversify greatly, which may become the basis for deciding on the order of appearing on the list of co-authors of the study. In turn, the variant where the analysis is assigned to individual persons or small groups is less satisfactory in terms of the research, as the coordinators will have to perform the task of putting the analyses together on their own.

Cooperation takes place when a specific task can be performed by any member of the team and there are no territories of sole responsibility (cf. Fig. No. 3). For example, when introducing changes to a joint paper, it is not necessary to determine

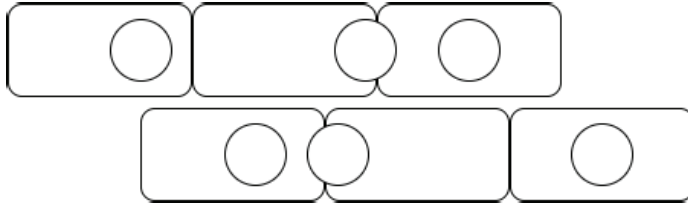


Fig. 3. Cooperation: functionally related tasks. The circles symbolise individuals, their distribution on the rectangles the partial responsibility and contribution to the performance of a task.

Source: authors' own study.

whose contribution it was. Projects of this type are usually prepared in advance, expectations and procedures are described in detail and they have to be observed during performance of a given task. Such excess of bureaucracy is meant to prevent situations in which someone would do a given job incorrectly and to understand of the unwritten rules would need introduction by somebody supervising the quality of this task. This type of joint work is easy when it derives from a project financed from a grant. Grant applications, particularly those from the European Union framework programs, are detailed so that, if funding is granted, they can be implemented by people other than those assumed in the original application. This is due to the organisation of the distribution of funds for research and competition in this area. In effect, the tasks have been detailed before the start of the work. Such detailed description creates conditions that allow people with lower qualifications to perform the tasks equally well. Authors with higher qualifications may be unwilling to initiate work of this type – the bureaucratised process of work may deprive them of the sense of agency, as it is difficult to intervene individually in the course of performance of the planned processes. Efficiency of performance is of essence in cooperation. Anybody should be able to perform all the work, while individual tasks cannot be perceived as ignoble.

The third type of joint work is collaboration (cf. Fig. No. 4), which consists in striving for a joint objective by means of clashing of individuals with unequal sta-

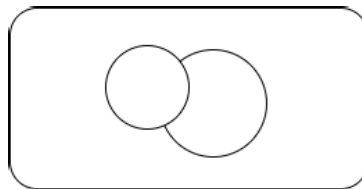


Fig. 4. Collaboration: asymmetrical conflict within a task. The circles of various sizes symbolise diverse potential of persons, and places where they overlap – conflicts.

Source: authors' own study.

tus. Conflicting interests, points of view or values within a team may cause a conflict, which – if it turns out to be creative – fosters opportunities for breakthrough accomplishments. In the context of research, this situation may refer to the collaboration between academics from different disciplines or between students and lecturers. The success of such activities depends on the extent to which the opinions and contributions of those who are weaker in this relationship will be articulated on the one hand, and taken into account on the other. Collaboration, as compared to other forms, has the greatest potential to produce breakthrough events, escaping prior calculations. Being aware of this potential, the lecturers, in their relation with the students, will strive to create conditions where the students are not embarrassed to speak out. However, this does not only mean creation of egalitarian interpersonal relations, but also – or on the contrary – use of the ‘teacher’s violence’ (cf. Zamojski 2019) in enforcing it. All of this is done to accustom the weaker side to the fact that successful collaboration requires students to speak out. Mere practice of egalitarianism does not have to lead to it. If a diverging opinion appears, one may have doubts as to the fact that the atmosphere is sufficiently egalitarian or that the weaker side has the expected potential at its disposal.

The mode of transition between the type of collaboration and the guidelines of joint authorship depends primarily on the head of the team (if such head exists). Some criteria of authorship are easier to fulfil in specific conditions. When trying to determine the chances of fulfilling (+) or the risk of failing (–) to comply with the guidelines by each of the persons engaged in the research, the author tried to account for the situations where the participants are committed to collaboration and ethical conduct, such as the submission of true declarations.

Table No. 1. Chances and risks for the fulfilment of ICMJE authorship criteria with respect to various modes of organisation of research collaboration where (+) means chances, (–) means risks and (+/–) means an unclear situation.

Guidelines	Joint work		
	Coordination	Cooperation	Collaboration
1. Significant contribution to the concept or draft of work or procurement, analysis or interpretation of data for a study	–	+/-	+
2. Preparation of work or its critical overview with respect to important intellectual content	+	+/-	+
3. Final approval of the version to be published	–	+/-	+
4. Consent for being accountable for all aspects of the work	–	+	+/-

Source: authors’ own study.

Working in conditions of tension and sometimes even conflict, which are characteristic of collaboration, all the participants have the chance to make significant contributions at three stages of the work (conceptualization, preparation, and approval). However, some aspects of the paper may seem unfamiliar to them. Work under conditions of coordination is the opposite, as it creates a risk that students may be left out of the study design and final approval of the paper, and therefore not be fully responsible for the work. Each participant has the opportunity to make a significant intellectual contribution to the work through the tasks assigned to them. Assessing the risks beforehand in cases of cooperation creates the most uncertainty, as the work may be divided into small parts in such a way that participants, even if they understand the whole, may feel a lack of individual significance due to the fragmented series of micro-contributions.

The literature on the topic (Fine and Kurdek 2010; Scassa and Chung 2015) recommends determining co-authorship before beginning the work. However, this approach may not account for how the work unfolds (Maurer 2017). Many projects started jointly do not result in a publication or do not come to fruition, as they remain at the project stage. The publication process is time-consuming, and some participants may lose interest in it, especially students who do not continue their education. This is the case in particular in reference to students who do not continue their education.

### Recapitulation

For persons employed to carry out research, working with people who deal with it on an incidental basis is not an ethically obvious or easy situation. When deciding to work together, professionals must – sooner or later – namely when designing research or preparing a publication – solve several dilemmas. Among them, the issue of authorship and organisation of the joint work seem to be interestingly intertwined, when one accounts for the guidelines of academic associations as to who can be attributed with authorship of a paper or who can be listed in the acknowledgements and whose contribution can be omitted. The specific features of coordination, cooperation and collaboration outlined in the paper have allowed for showing their limitations in the context of research work. Even though this typology calls for empirical verification, it may – along with the juxtaposition of chances and risks of individual solutions – form a basis for the outline of decisions about the mode of organisation of such research cooperation or joining a team. Thanks to the typology of joint work, the students who usually do not determine its type as they do not initiate it, have an opportunity of recognising the type proposed to them and assess their chances in it. If one wishes to fulfil the criteria of co-authorship, their own opinion must be articulated, as this is the basic requirement in collaboration. If one performs only one task for the sake of a joint paper during the studies, the chances for fulfilling the authorship criteria are slight.

The degree to which the above types of joint work can be singled out in research practice requires further studies, along with the permanence of the order in the case of individual research projects. Thanks to this, it will be possible to determine the utility of the presented model in foreseeing the conditions in which one becomes a co-author of a publication and when one only deserves acknowledgements. It is also worth monitoring how inequalities between the people working together and the authorship issues grow in the context of post-humanism, i.e. for example when the researchers start to support themselves in their creative work with assistants equipped with the so-called artificial intelligence as its growing intellectual potential may become difficult to distinguish from individual autonomy.

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## Summary

### *Co-authorship: Exploitation and Collaboration (with Students)*

The goal of the article is to identify such organisational solutions in the field of research collaboration with students that would be ethical from the perspective of subsequent co-authorship of articles and beneficial to both students and academic staff. For this purpose, three different models of working together are analysed (coordination, cooperation and collaboration), which organise relations of a team in a specific way. The possibilities and limitations of these models are assessed against the background of contemporary challenges of academic work and formal requirements for co-authoring articles. This offers a comparison of the opportunities and threats of individual solutions, which – together with three models of organising the collective work – can form the basis of a decision-making scheme on how to organise such work with students.

## Keywords

ethics, collaboration patterns, research collaboration, authorship

English translation: Lingua Lab s.c. (Kraków).

Tłumaczenie zrealizowano dzięki środkom z Programu rozwoju czasopism naukowych Uniwersytetu Gdańskiego.

The translation was financed with funds made available by the Programme for the Development of Scientific Journals at the University of Gdansk.