

Good Practices in Review Procedures in Science

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Composition of the Committee on Ethics in Science

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This document was prepared by the Committee on Ethics in Science, which advised the Minister of Science and Higher Education from 2009 to 2010.

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Dear Readers,

Transparent, reliable, and honest conduct in science guarantees its quality and is a prerequisite for its dynamic development. Only substantive conduct in all aspects of scientific and academic activities, free from scientific patronage, can help build a strong position for Polish science.

Such formulated postulates are among the priorities of our department's activities. Alongside a range of procedures and rules aimed at eliminating all manifestations of unreliability and bias, it is especially important to promote attitudes of unconditional honesty, diligence, and deep responsibility for actions undertaken within the scientific community. I am convinced that disseminating and cultivating good practices is a common challenge, which we must undertake to combat existing irregularities.

I am pleased to present to you a document that is an important voice in the difficult, but necessary debate on scientific reliability. This work is the result of meticulous efforts by a community of scientists committed to promoting ethical principles. "Good Practices in Review Procedures in Science" comprises the most important recommendations concerning the responsibilities of both entities ordering and accepting reviews, as well as the responsibilities of the reviewers themselves.

This document has been prepared by the Committee on Ethics in Science, which advised the Minister of Science and Higher Education from 2009 to 2010. I would like to thank the Chairman, Prof. Dr. Hab. Witold Marciszewski, and the members: Prof. Dr. Hab. Andrzej Górski, Prof. Dr. Hab. Jan Hartman, Prof. Dr. Hab. Aurelia Nowicka, Prof. Dr. Hab. Ryszard Nycz, Prof. Dr. Hab. Henryk Samsonowicz, Prof. Dr. Hab. Jerzy Szacki, Rev. Prof. Dr. Hab. Andrzej Szostek, and Prof. Dr. Hab. Aleksandra Wiktorowska for their assistance in solving many complex issues related to scientific unreliability, but most importantly, for the substantive debate that resulted in the document you are now holding.

My intention is that this document will support you in review procedures and in counteracting irregularities. I believe that transparency in this area of scientific practice forms the foundation for its proper development and builds the authority of the scientific community in Poland.

Prof. Barbara Kudrycka
Minister of Science and Higher Education

Introduction

Reliable reviewing of scientific papers, research projects, and other academic documents, as well as evaluating research and teaching units, has a decisive impact on the quality of science, forming the foundation of academic culture and the source of social authority for scientific communities. Ensuring high standards in review procedures and reviews themselves is an essential condition for practicing science and the activities of scientific institutions worthy of that name. The practice of reviewing and the procedures for evaluating scientific papers, research projects, and other documents containing scientific content are prone to various pathologies, including conflicts of interest, cronyism, nepotism, institutional

and substantive bias, negligence, and incompetence. The document "Good Practices in Review Procedures in Science" aims to counter these pathologies by indicating the principles of proper review procedures.

The document consists of two parts: recommendations for how to conduct reliable review procedures in science by institutions conducting or supporting scientific research (Part I) and recommendations for reviewers (Part II). The document applies to all types of official procedures involving the acquisition and use of reviews, including procedures for scientific promotions, grant and award competitions, allocation of funds for scientific investments, authorisations for conducting academic-level educational activities, evaluations of teaching units, evaluations of materials proposed for publication in scientific journals, and others. It is proposed that "Good Practices in Review Procedures in Science" be promoted and disseminated by central institutions acting for science and also made available by institutions conducting review procedures to all interested parties, including those commissioned to prepare reviews. Given the general nature of the document, the recommendations within it require supplementation to account for the specifics of individual scientific disciplines. Such supplements, for example in the form of regulations, could constitute annexes to this document, expanding on its individual points. These annexes should be edited by the relevant scientific committees of the Polish Academy of Sciences and applied appropriately in various types of proceedings, such as doctoral and habilitation proceedings, grant competitions, and others within the discipline of science to which they pertain.

Part I

Responsibilities of the Ordering and Accepting Entity in Review Procedures

1. Proper Selection of Reviewers

It is essential to select reviewers who are as competent as possible in the relevant field. The competence of a potential reviewer is indicated not only by their knowledge, evidenced by significant scientific achievements, but also by their reputation as a reliable reviewer. It is unacceptable to ask individuals to prepare reviews based on their presumed leniency or strictness in evaluation. It is also unacceptable to appoint reviewers in return for their past services to the ordering entity or to create earning opportunities for them. If there are very few specialists in a particular field, foreign reviewers should be utilised whenever possible. In cases where there are strong substantive and institutional disputes related to the subject of the reviewed work or the activities of the evaluated person, the ordering entity must make special efforts to ensure that these disputes do not influence the review procedure.

2. Agreements for Preparing Reviews

Agreements for preparing reviews should significantly enhance their reliability and timeliness, and reviews that do not comply with the agreement should not be accepted. It is necessary to enter into appropriate agreements with reviewers. These agreements should specify high standards of reliability and detail, ensure the credibility of the conclusions, and be adequate to the needs of the ordering entity. When evaluating works presenting empirical research results, the ordering entity should not limit itself to sending the work or documentation alone. The reviewer must also be provided access to the materials constituting the research documentation as stipulated in the agreement. The ordering entity may reject a review if it does not comply with the agreement and relevant legal regulations, such as the Act on

Scientific Degrees and Titles and the Act on Degrees and Titles in the Field of Art, which outline some of the reviewer's obligations. It is unacceptable to accept reviews that clearly fail to meet substantive and formal requirements of scientific reviews, including cursory reviews dominated by unsubstantiated critical opinions or unsubstantiated praise, lacking logical coherence between content and conclusion, i.e., decidedly critical reviews with a positive conclusion or vice versa. The deadline for completing the review should correspond to the extent of tasks set before the reviewer. In the interest of directly concerned parties, especially authors of reviewed works or grant applications, the agreement for preparing the review should strictly address any delays in completing the review. It is reprehensible to block the review procedure due to passive waiting for delayed review delivery.

3. Independence of Reviewers' Opinions

It is unacceptable to probe the opinion of a reviewer or to exert pressure on them—both before entering into an agreement to prepare a review and during its preparation by the reviewer. Informally consulting with a potential reviewer about the content of the reviewed work, application, or research project before entering into an agreement with them is considered improper. A future reviewer may, and in some cases should, be allowed to inform the interested entity whether they can undertake the review and possibly within what timeframe before receiving the project agreement and the work itself. However, this should only be based on brief information about the content (table of contents, introduction, summary) and volume of the work to be reviewed. The candidate for reviewer should have full freedom to decide whether to accept or reject the work for review. If undertaking the review is a legal obligation, it is not for the ordering entity to determine whether the reviewer is subject to such an obligation. It is particularly improper to send the reviewer a proposal to enter into a review agreement simultaneously with a copy of the entire work. This could place the reviewer in a difficult position should there be a refusal to review, for any reason, is likely to be interpreted as motivated by a desire to avoid the discomfort associated with writing a negative review. Such situations are unfair to both reviewers and authors of reviewed works. The requirement to present the reviewer, before entering into an agreement, only with a summary of the work or other documentation subject to review, is particularly important in promotion procedures. It can also be considered a standard beyond the norm for publication reviews. In all cases, pressures and suggestions from the ordering entity and third parties—both before entering into an agreement and during the review's preparation—must be excluded, except concerning the timeliness of completing the review.

4. Conflict of Interest in Review Procedures

The reviewer and the author of the reviewed work should not be in close personal or professional relationships. The reviewer must not be in a hierarchical relationship or close personal relationship, let alone a kinship, with the author of the reviewed work, project, etc. A supervisor should not review the works of their subordinate, although in cases where the number of specialists in a particular field is very small, an exception to this rule may be made. Avoiding all types of conflicts of interest or circumstances that could undermine the social credibility of the review procedure is a shared responsibility of the ordering entity and the individual asked to prepare the review.

5. Remuneration for Review Preparation

Remuneration for preparing a review should correspond to the work expected from the reviewer and accepted customs. Inadequately defined remuneration can disrupt the objectivity and credibility of the review and may tempt the reviewer to be overly lenient or harsh (if the remuneration is too high, encouraging the acceptance of further assignments) or discourage them from preparing the review diligently (if the remuneration is too low). What constitutes appropriate remuneration is determined by accepted customs (which may evolve) and the volume of the document or work presented for review and the requirements set by the review agreement, and consequently, the amount of work necessary to complete it diligently. Therefore, it is inappropriate to use uniform rates for reviews within a particular type of procedure, regardless of the volume of the reviewed documentation.

6. Confidentiality in Review Procedures

The review procedure should be conducted with confidentiality, especially during the review collection phase, but at the appropriate time, reviews should become transparent to all members of the body conducting the procedure and, in some cases- especially doctoral and habilitation reviews—publicly accessible. It is required to maintain some confidentiality in the review process until all required reviews are collected by competent individuals or bodies. During this period, the content and conclusions of the reviews should generally remain confidential to all unrelated parties. Any right to information for unrelated parties, especially directly interested parties such as authors of the reviewed work, project, or application, should be predetermined by the regulations of the entity conducting the procedure or other regulation governing its activities. Lack of confidentiality during the review collection phase can disrupt the independent work of reviewers and even provide opportunities for exerting pressure on them or other types of manipulation. After the reviews are collected and accepted by the authorised body (committee), efforts should be made to ensure that all individuals authorised to make decisions in the given procedure can review the reviews as early as possible. It is reprehensible to limit these individuals to being informed only of the conclusions of the reviews, especially without informing them of significant criticisms contained in the reviews, including positive reviews. In procedures financed by public funds or supervised by public authorities, reviews should be made as accessible to the public as possible, in line with the spirit of transparency and openness in public life in democratic countries. This rule is also encouraged for non-public entities. Various circumstances, such as the classified nature of research related to state security or the legitimate legal interests of the author of the reviewed documentation or other individuals involved in the review process, may lead to limitations in disclosing the content of the reviews, but these limitations should result from a known and applicable regulation. The reviewer should also have the right to keep their name known only to the decision-making body if they wish. As a general rule, scientific reviews in areas under public oversight should be transparent. However, transparency of reviews does not mean transparency of all elements of the qualification process. All participants in the process are obliged to maintain discretion regarding confidential information they accessed and any other information that could become the subject of distorting rumours and excitement in the scientific community.

7. Disputes in Review Procedures

Additional reviewers should be appointed in disputed or complex cases, and the opinions of all reviewers should be duly respected. Decision-making bodies, especially committees conducting review procedures, should not ignore the conclusions of the reviewers they appointed. Instead, they should respond to them judiciously and fairly. It is unacceptable to ignore negative reviews when they constitute half or more of the reviews obtained for a given work, project, etc. Receiving a majority of negative reviews, subject of the review should be disqualified. When negative reviews make up half of all reviews obtained at a given stage or constitute a minority but are more than one, it is necessary to appoint an additional reviewer. Additional reviewers should also be appointed for works or projects of an exceptionally interdisciplinary nature or those causing particular controversy among specialists. Decisions by bodies or individuals conducting qualification and selection procedures involving reviews should not blatantly contradict the conclusions of the reviews when they are predominantly negative or predominantly positive. If such bodies use discussion and voting as the only form of decision-making, a clear contradiction between the decision and the predominant opinion of the reviewers can be grounds for appealing the procedure as improperly conducted. Decision-making bodies, such as faculty councils, may express a lack of confidence in the reviews presented to them by refusing to accept them. However, once reviews are accepted, their conclusions should not be ignored. Deviations from this rule may result from procedures that allow the reviewed work's author to defend their theses, demonstrating convincingly the unfoundedness of the main criticisms. Reviewers' recommendations to revise the work or other documents under review should be carefully considered, taking such an option seriously if the procedure allows. When revisions are recommended to the author, all reviewers have the right to re-verify the work. Furthermore, the entity conducting the procedure and ordering the review has the obligation to inform the reviewer of the progress of the procedure, especially of its interruption or closure and any possible reopening of a similar procedure regarding the same person, related to a work similar in content to the work previously reviewed by them. It is reprehensible to repeat the procedure (e.g., a doctoral defence) for the same or very similar work if the previous procedure ended in failure, especially with the exclusion of reviewers who previously issued negative opinions.

8. Irregularities and Abuses in Review Procedures

Any suspicions regarding possible irregularities or abuses should be taken seriously and clarified before the conclusion of the procedure involving the review process. The body conducting the procedure involving the review process should pay particular attention to the scientific reliability of the person whose works are being reviewed. It is essential to react firmly upon discovering abuses and to exercise great caution when significant indications suggest that an abuse may have occurred. In no case should such signals be ignored. It is important to remember that in some situations, anonymous reports also carry a certain degree of credibility and should not be dismissed outright. The entity conducting the procedure involving the review process is not a law enforcement agency or court but may still come into possession of evidence or develop suspicions regarding the scientific reliability of the works and individuals being reviewed. Irregularities and abuses can involve scientific fraud, infringement of intellectual property rights, embezzlement of funds, etc. In any such situation, when there is significant suspicion or certainty of abuse, regardless of the source of information and whether the abuse is related

to activities subject to qualification by the given body, the procedure should be wholly or partially suspended until the matter is clarified by competent entities. In cases of scientific unreliability, the procedure should be concluded with a negative outcome for the responsible individuals, and information about the abuses should be forwarded to the appropriate authorities. It is also important to be aware of the possibility of slander and defamation against the author of the reviewed work. Firmness in condemning abuses should be matched by the clarity of acts exonerating those wrongfully accused. Institutions authorised to evaluate scientific research and conduct promotion procedures for their employees should establish internal rules to protect science from abuses, complementing general law in this matter. These regulations should be made publicly available.

Part II

Responsibilities of Reviewers

1. Competence of Reviewers

A specialist receiving a proposal to prepare a review is obliged to carefully assess their substantive competence and practical ability to prepare the review within the designated time and, in case of doubt, to decline the review. The ordering entity, acting in good faith, requests the preparation of a review from individual specialists, placing trust in their knowledge and reliability. However, this entity may lack information about certain circumstances that could make engaging a particular specialist as a reviewer undesirable. Therefore, a specialist receiving a proposal to prepare a review should not consider the receipt of the order as decisive evidence that they are the appropriate candidate for the reviewer. Their duty is to consider all circumstances related to their person and the ordering entity that may be relevant to the decision to prepare the review. Undertaking the preparation of a review, the expert assumes significant responsibility, often associated with the vital interests of the individuals whose works are being evaluated and the expenditure of considerable funds on scientific research, investments, or publications. The reliability of the review in fully substantiating its conclusions determines the fair or unfair treatment of the individuals whose works are being evaluated, the ordering entity, and the financial decision-makers who depend on the reviewers' opinions. Before undertaking the review of a work, it should be determined whether one is substantively competent in the subject matter of the work or in the area of science to which the work pertains, for example, when it is a research or educational project. Substantive competence includes knowledge of the basic literature related to the research discipline to which the work belongs or refers, and the current state of research in that discipline. If the subject of the review is a project to conduct scientific research using special infrastructure, a project to conduct a field of study, or other undertakings involving non-scientific skills (organisational), the candidate for reviewer should have practical experience in the relevant. It is reprehensible to undertake the review of numerous works on topics belonging to very different and distant academic disciplines. No expert, not even a professor with great authority, can consider themselves or be considered a specialist in the entire branch of science they represent. An important criterion for recognising oneself as a specialist in a given field, besides the sense of competence or lack thereof, is having a scientific output in that field or at least conducting lectures or seminars in its area. It is unacceptable to accept too many works for review and to commit to deadlines that are unrealistic from the perspective of the available time.

2. Conflict of Interest of Parties in the Review Process

It is prohibited to assume the role of a reviewer under conditions where there is a conflict of interest or circumstances that may cause the parties involved in the review process to be suspected of such a conflict of interest. Only a person who has no relationships with the author of the reviewed work or with the entity commissioning the review that could affect the reliability and objectivity of the review and its public credibility may undertake the review. Any situation where the reviewer could benefit from writing a positive or negative review, including an unreliable review, constitutes a conflict of interest between the reviewer and the entity commissioning the review or the author(s) of the reviewed work, project, application, or other type of document. A conflict of interest can arise from close professional relationships between the reviewer and the entity commissioning the review, especially those with a financial aspect. A conflict of interest can also arise from close personal relationships between the individuals involved in the process, including both positive and negative ties. Due to the conflict of interest or the risk of its occurrence, one should not undertake the review of works authored by people who are close acquaintances, collaborators, or subordinates, and even more so, family members, individuals who are or may be supervisors of the reviewer under likely and foreseeable circumstances, or those who may be able to decide on matters vital to the reviewer. In the case of evaluating the activities of scientific units, the reviewer should not be employed or have any long-term cooperation with the unit, either at the time of the review or previously. They should not have such plans for the future either. Exceptions to these rules are possible in exceptional situations, due to the narrow group of specialists in the field to which the reviewed work or documentation belongs.

3. Fulfilment of Reviewers' Formal Obligations

Unless special and unforeseen circumstances arise, one should not resign from preparing a review after signing an agreement regarding it. A person who has undertaken the review of a work should not withdraw from this decision unless there are specific circumstances compelling them to do so, such as random events or the detection of a conflict of interest. If a reviewer realises that they are clearly unable to prepare the review only after signing the agreement and becoming familiar with the work, they may withdraw from the agreement, explaining the situation in such a way that no suspicion arises that the reason for the refusal is a reluctance to write negative reviews. It is unacceptable to refuse to write a review after reading all or part of the work and determining that the review would have to be negative. Discomfort associated with writing a negative review cannot, under any circumstances, be a reason to avoid preparing it. An extraordinary situation should be recognised if the reviewer concludes that the submitted work or documentation, due to its low quality, does not qualify for review. Such a conclusion is equivalent to a negative result, not a refusal to review. It cannot be the sole component of the review. The review must include a proper justification for the conclusion. Its formal structure will therefore be different than that of an ordinary review.

4. Integrity and Honesty in Preparing Reviews

A reviewer must thoroughly familiarise themselves with the reviewed work (documentation) and make every effort to honestly and fairly assess its professional and cognitive value, independence, and innovation, in accordance with the current state of the discipline they represent and the requirements (arising from law, the contract, and academic customs) imposed on reviewers within the given type of

proceeding. When undertaking to prepare a review, the reviewer is obligated to thoroughly familiarise themselves with the provided documentation. If the subject of the review is a scientific work or a collection of such works, they should read them attentively in their entirety. The reliability of the review requires a good understanding of the current state of research in the given discipline, having one's own achievements in that field, and a proper understanding of the requirements placed on the author of the reviewed work by the procedure in which it is being assessed. While preparing the review, the reviewer is guided by the terms of the agreement with the commissioning entity and the relevant legal regulations, if such specify the obligations of the reviewer. In particular, a reviewer required to give an opinion on the innovativeness of the scientific work or research project presented for evaluation cannot avoid expressing their opinion on this matter and potentially issuing a negative conclusion if the required original contribution to scientific knowledge is not found in the reviewed work or project. The reviewer's duties also include assessing the degree of independence of the evaluated work, including identifying potential unacknowledged borrowings and so-called plagiarism. The reviewer's responsibility for detecting abuses related to someone else's intellectual property, including plagiarism, is not absolute. Nonetheless, it is expected that they will detect and disclose such abuses if they involve works of widely known specialists in the field or recent works that constitute a significant contribution to the current state of research in that field. Disclosure of abuses, such as plagiarism or any other misconduct, for example, data falsification, necessitates a negative conclusion of the review. The fundamental requirement of fairness is the reviewer's impartiality in formulating assessments. However, there may be a review procedure where one reviewer's task is exclusively to critique the presented work, while another's is to highlight its strengths. In such cases, impartiality cannot be expected from the reviewers by nature, but they are still bound by honesty, excluding malice and bad faith accusations, as well as unfounded praise. The degree of thoroughness of the review, its length, and some of its formal and stylistic features may be determined by the prevailing academic customs in the discipline. Respecting these customs, however, requires careful differentiation from widely spread bad practices. An example of a good custom, cultivated in many disciplines, is a short, synthetic characterisation of the reviewed work at the beginning of the review. An example of a bad but widely spread practice is the trivialisation of language errors in the reviewed works.

5. Coherence and Substantiality of the Review

The review should be logically coherent and maintained in a substantive tone; it must not be superficial, and its conclusions should be clear and unequivocal. The review should provide a reliable account of the content and conclusions of the reviewed work or, as appropriate, the content of the reviewed scientific achievements, the activities of the evaluated institution, etc. It should also include clear and well-justified evaluations of the individual components of the documentation presented to the reviewer, especially the scientific theses and desiderata contained therein in the case of an application-type documentation. The review should not be superficial and, in terms of length, should conform to the accepted standards for the given type of procedure. Moreover, the review should end with a clearly expressed, unequivocal conclusion, either positive or negative, unless the procedure allows for conditionally positive reviews. The conclusion of the review should be justified by its analytical part. It is especially unacceptable to issue reviews consisting mainly of criticisms but ending with a positive

conclusion. Similarly, reviews maintained in an emotional tone, overtly biased, especially malicious or composed of unfounded praise, are unacceptable. In cases where the review procedure allows for the revision of works based on the reviewer's comments, the reviewer may issue a conditionally positive opinion, demanding appropriate corrections to the work. In such a case, the reviewer has the right, and if the procedure requires, the obligation to re-verify the reviewed work.

6. Diligence and Discretion of Reviewers

A review should be prepared in a timely and discreet manner, without consulting other reviewers or disclosing information about one's opinions and intentions to them. The review should be completed and submitted to the commissioning entity by the deadline specified in the agreement. If it is not possible to meet the deadline, the reviewer is obliged to contact the commissioning entity and agree on a new, reasonably close deadline for the review's completion. While preparing the review, the reviewer should not seek to learn the identities of the other reviewers involved in the same process. If, despite this, the reviewer becomes aware of such information, they should not consult their work with the other reviewers in any way, especially not asking them about the anticipated conclusions of their reviews.