CORRECT CITATION PRACTICE
Academy Advisory Memorandum

April 2014

Strutting with borrowed plumes

This seventeenth-century painted ceiling in the Academy’s Trippenhuis Building was recently exposed and restored. It probably represents the fable of Zeus and the upstart crow by (or after) Aesop (circa 620 BC – circa 560 BC). See further Strutting with borrowed plumes (Pronken met andermans veren)

‘One day, Zeus decided to give the birds a king. They would appear before him and he would choose the most beautiful to be their ruler. All the birds assembled by the waterside to preen and clean their feathers. The crow knew that with his meagre plumage he would have no chance. So he waited until the others had finished and then picked up the finest feathers that they had dropped. With these, he adorned himself as the most magnificent bird in the kingdom. And lo, Zeus did indeed decide to crown him king. But the other birds rebelled at this, and they plucked out the upstart crow’s borrowed plumes. In the end, he looked just as dull as before.’
SUMMARY

This advisory memorandum concerns the extent to which scientific integrity can be violated in the transitional area between, on the one hand, plagiarism and, on the other, the correct reuse of texts, ideas, and other published material. The main purpose of the memorandum is to define that transitional area and to clarify a number of key concepts. The intention is therefore to provide an assessment framework for interpreting and evaluating the reuse of previously published material which can assist research integrity officers and integrity committees in assessing (alleged) problems in this area. It can also play a role in the education of students and young researchers, thus helping to prevent such problems in the future.

The boundaries of the spectrum are clear, namely plagiarism at one end and correct reuse at the other. Plagiarism – 'strutting with borrowed plumes' without attribution – constitutes what is referred to in the international literature as 'research misconduct' (RM). Attribution when reusing verbatim, paraphrased, summarised or translated material that has been published previously, and when referring to others and oneself, is not only correct procedure but also necessary for the advancement of science. Within these boundaries there is a grey area that this advisory memorandum aims to clarify. The term 'plagiarism' is sometimes used to refer to something that is not in fact plagiarism, and there are gradations in the interpretation and assessment of different kinds of reuse, varying from acceptable through questionable to actual research misconduct. This memorandum is concerned with what the international literature refers to as 'questionable research practices' (QRP). An assessment framework has been developed that can serve to subtly 'colour in' the grey area of QRP in six particular situations. A distinction is made according to the type of publication from which material is reused – other people's work, the author's own work, or work produced jointly with others – and the extent to which the reuse is traceable (with or without attribution).

The analysis shows that determining whether there is a case of QRP or RM is not a simple, mechanical matter. Before arriving at a judgment, it is first necessary to carefully interpret the facts of the case, something that often requires specialist knowledge of the discipline concerned. Peers therefore play an important role in assessing whether certain publication behaviour is normal within the discipline or must be classed as QRP or RM. When arriving at this assessment, it is also important to determine the purpose of the reuse and what adverse effects it may have on other researchers and on the advancement and good name of science.

The analysis leads to two main conclusions:

1. The issue of the correct reuse of previously published material should be given a place in the Netherlands Code of Conduct for Scientific Practice (the code applied by the Association of Universities in the Netherlands, the VSNU). The Committee does not envisage a set of detailed rules and guidelines but an articulation of the concept of the 'correct reuse of previously published material', including the underlying values inherent in proper scientific practice.

2. Caution should be exercised when assessing publications from the past on the basis of non-existing rules on reuse, certainly when – as this advisory memorandum demonstrates – such 'unwritten rules' include the necessary shades of grey. Researchers are entitled to have their work interpreted within the applicable context and to be assessed on the basis of careful consideration of the nature, reasons, and effects of their actions.

The Academy's Committee on Citation Practice is not under any illusion that this advisory memorandum will dispense with all the problems, but considers it positive that discussion of this issue has begun and will undoubtedly continue.

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1 The Dutch word wetenschap comprises the meanings of both 'science' and 'scholarship'. For the sake of readability, this English version uses simply 'science' (and therefore also 'scientist', 'scientific' etc.). Where appropriate, 'research', 'researcher' etc. may also be used.
Introduction
It is characteristic of science that it builds upon previous scientific publications, not only from within the researcher's own line of inquiry but also – especially – those of other researchers. Science operates by virtue of the fact that researchers can freely take note of one another's insights and results, can decide in all openness which research directions are more and less promising, and can be inspired by these when pursuing their own research. Openness and transparency, including in the culture of publication, promote the advancement of science. This is precisely why the correct reuse of texts, ideas, and research results is a core value in scientific endeavour. In the case of plagiarism – referred to in the current Netherlands Code of Conduct for Scientific Practice applied by the Association of Universities in the Netherlands (VSNU) as 'strutting with borrowed plumes' – there is no question of correct reuse and this is considered to be a violation of scientific integrity. Together with 'falsifying' and 'fabricating' data, which are generally viewed as more serious violations, plagiarism is considered in the international literature to be an obvious kind of research misconduct.

The fact that plagiarism in science is unacceptable is not in itself newsworthy, and would not be any reason for the production of an Academy advisory memorandum on the correct reuse of previously published material in new publications. On the other hand, the recent commotion in the media regarding 'self-plagiarism' and the stir that this relatively new and unfamiliar concept caused in the scientific world and among the general public is indeed such a reason. Quite a few scientists will have turned to the VSNU code in search of a definition of the term 'self-plagiarism' and a benchmark for testing their own behaviour as regards that matter. They will have searched in vain. The Code does not in fact contain the term 'self-plagiarism' and neither do most of the international codes of conduct. The term can be found, however, in publication guidelines, primarily in relation to multiple publication (duplication) of the same article, or substantial parts of it, in a number of journals without their publisher and/or editor being aware of this, and consequently without attribution. Recently, however, the term 'self-plagiarism' came to be used in the media in a much broader sense. The examples that were given led to a lively discussion of what is customary when a researcher reuses his/her own texts, and what goes beyond the bounds of acceptable conduct.

The Royal Netherlands Academy of Arts and Sciences (KNAW) decided that these matters needed to be clarified and therefore set up a Committee on Citation Practice. This has the task of clarifying how such cases should be interpreted and assessed, and of providing an assessment framework that can be applied by research integrity officers, integrity committees and the boards of universities and research institutions.

Procedure
The Committee met four times and also studied the relevant international literature and codes of conduct. The chairs or secretaries of the Academy's various sections filled in a written questionnaire regarding the publication culture within their discipline. The Committee also consulted various individuals and groups: research integrity officers at universities, the chairs of research integrity committees, the chair of the National Board for Research Integrity (LOWI), the chair of the College of Rectors of Dutch Universities, a copyright lawyer, publishers of scientific journals, journalists, and experts from the Centre for Science and Technology Studies (CWTS). All these discussions took place in an atmosphere of openness, and the Committee found them useful and inspiring. (A more extensive account of the Committee's work, together with the resolution appointing the Committee and a bibliography, can be accessed at the Academy Committee on Citation Practice: Accountability Statement.

Terminology used
The Committee applies the following definitions:
- **Reuse** is defined as reusing verbatim, paraphrased, summarised, or translated material that has been published previously (or parts of such material).  

- **Plagiarism** is the reuse of someone else's material without proper attribution.

  - The standard international definition is: ‘Plagiarism is the appropriation of other people’s material without giving proper credit’. This definition contains two important elements: a researcher who plagiarises appropriates material belonging to another researcher and consequently does not sufficiently credit that person’s contribution. Plagiarism therefore involves, by definition, using other researchers’ material without proper attribution. The term *self-plagiarism* is sometimes used to refer to the reuse of one’s own text without proper attribution. The present advisory memorandum avoids that term, however, because it is basically inaccurate. One cannot, after all, steal intellectual property from oneself or appropriate it to oneself again. This means that the essence of the concept of ‘plagiarism’ – which is also responsible for its serious designation as ‘research misconduct’ (RM) – does not apply in the case of ‘self-plagiarism’.

- A **quotation** is the reuse of someone else’s text with attribution.

- A **self-quotation** is the reuse of one’s own text with attribution.

- A **citation** (or reference) is a reference, according to bibliographical conventions, to a publication by one or more other people.

- A **self-citation** is a reference, according to bibliographical conventions, to a publication of one’s own. NB: If a publication has co-authors, then a reference to that publication by any of them constitutes a case of self-citation.

In describing the assessment framework for the reuse of previously published material, this advisory memorandum distinguishes between (a) research misconduct (RM) and (b) questionable research practices (QRP).

- RM constitutes – in all cases – a violation of scientific integrity which – after careful assessment – must not be allowed to remain free of consequences. Plagiarism is considered in the international literature to be a form of RM.

- In the case of QRP, one is dealing with less serious deviations from the standard – often as a result of carelessness or ignorance – which are indeed considered undesirable but which do not usually merit the serious designation RM. This advisory memorandum demonstrates, incidentally, that there are numerous gradations within QRP that require assessment as part of a rigorous procedure to determine whether research integrity has in fact been violated, and if so to what extent.

**Assessment framework**

The Academy’s request to the Committee was essentially to clarify the grey area in between plagiarism and the reuse of one’s own material. To put this problem into perspective, it should be noted immediately that the scientific-ethical problems involved must not be exaggerated. The experts consulted by the Committee did not see the problems involved in reusing one’s own material as a major issue. It is also notable that research integrity officers, scientific integrity committees, and the National Board for Research Integrity (LOWI) say that they hardly ever need to deal with matters that concern solely such reuse. Plagiarism is a much greater problem. We find a similar picture in the case of the Committee on Publication Ethics (COPE), an international organisation set up by publishers to provide an Internet platform for consideration of integrity issues in scientific and scholarly publications. Fewer than half of one percent of the cases dealt with concern problems relating to the reuse of one’s own material without attribution. This does not of course detract from the value of analysing the ‘grey area’ in order to increase awareness of possible integrity problems and of offering an assessment framework as a benchmark for dealing with specific cases.
When assessing whether, and to what extent, there is a case of QRP or RM when reuse has taken place, it is important to distinguish between various kinds of reuse (see the table below):

<table>
<thead>
<tr>
<th>Reuse of</th>
<th>Reuse of other researchers’ material with attribution</th>
<th>Reuse of one’s own material</th>
<th>Reuse of material produced jointly with co-authors</th>
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<tbody>
<tr>
<td>with attribution</td>
<td>A.1</td>
<td>B.1</td>
<td>C.1</td>
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<tr>
<td>without attribution</td>
<td>A.2</td>
<td>B.2</td>
<td>C.2</td>
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The rest of this memorandum will make use of this typology.

Each of these types involves different questions regarding integrity and potential integrity problems, of greater or lesser seriousness. When determining whether there is a case of QRP or RM in these various different types and when assessing them, there are always two main questions to consider:
- What purpose does the reuse serve (for example: recognition of other and previous contributions; traceability of scientific developments; standard formulation or standard element in an ongoing discourse; pretence (or otherwise) of new knowledge)?
- What are the possible adverse effects (for example: damage to the career of an author who is not mentioned; unjustified career promotion; damage to the progress and transparency of science; loss of confidence in science)?

On this basis, the Committee arrives at the following analysis.

A. Reuse of other researchers’ material

A.1 Reuse of other researchers’ material with attribution

When one builds upon the work of others, reuse with attribution is clearly the ‘gold standard’. This does not mean, however, that by imposing the ‘attribution’ rule one has unambiguously determined the boundaries between right and wrong, or that all potential problems have been addressed. This is because citing one’s sources is in fact a selective process. Ideally, a publication cites all the sources relevant to that publication. In practice, however, this is not feasible – it is always necessary to draw a line. The final selection will be primarily on scientific grounds (importance, precision, originality, recentness), sometimes also on strategic grounds (a journal with a high impact, collaboration partners) or on chance (just received, just recovered), and sometimes on questionable grounds (over-citation of authors with whom one is on good terms, under-citation of competitors). This means that problems regarding integrity may still arise – or may be considered by others to have arisen – even when quotations and citations are explicitly presented as such, or when sources are properly attributed. There may sometimes be a case of QRP, but by no means always. Whether the quotations used and the citations given are also the most appropriate, and whether no essential sources have gone unmentioned are questions that can only be assessed by peers who are sufficiently familiar with the discipline concerned.

A.2. Reuse of other researchers’ material without attribution

Using a quotation without proper attribution is considered to be plagiarism, i.e. a serious form of research misconduct. The adverse effects of plagiarism are:
- it prevents justifiable credit being given (too little credit to the original author and too much credit to the plagiarist);
- it misleads the public and the publisher regarding the originality of what is provided, thus having a detrimental effect on confidence in science;
- it disrupts the transparency of the content of science, in the sense that the genesis of ideas cannot be traced effectively, but it has no serious effects on the content of the science itself; it is therefore generally viewed as less serious than the two ‘classic’ forms of RM, namely falsifying or fabricating data (for a nuanced view of this, see footnote 7).

Plagiarism in the sense of reusing another researcher’s texts or ideas without proper attribution constitutes RM; assessing this, and determining sanctions, must, however, take account of the extent, frequency, and context. Someone else’s ideas may, for example, eventually become common knowledge,
and may then be presented as such. The experts consulted by the Committee tend to view ‘minor’ cases as QRP rather than RM. It would appear that even plagiarism is not, therefore, a matter of black and white.6

B. Reuse of one’s own material

B.1. Reuse of one’s own material with attribution

Research usually develops within long-term lines of inquiry and thus builds on previous work, which is generally also referenced. But not all previous publications need to be referred to. Here too, there is a selective process, but one that raises a different type of problem to that involved in selecting from other researcher’s publications. Authors may find themselves sailing between Scylla and Charybdis: too much self-quotation and self-citation means that they run the risk of being accused of narcissism, self-profiling, and attempting to boost their citation scores (although it is possible to correct for effects of this kind when determining the $h$-index, for example). By reusing their own material without attribution, authors also risk being accused of artificially expanding their own publications list (see B.2 below). Here too, whether the quotations used and the citations given are also the most appropriate, and whether no essential sources have gone unmentioned are questions that can only be assessed by peers who are sufficiently familiar with the discipline concerned.

B.2. Reuse of one’s own material without attribution

Reusing one’s own material without attribution is sometimes referred to in international publication guidelines as ‘self-plagiarism’. This is a term that the present advisory memorandum wishes to avoid (see above), firstly because stealing from oneself is in fact impossible, making it a *contradictio in adiecto*. Another reason for avoiding it is that the term ‘plagiarism’ brings with it the connotation of serious misconduct that immediately categorises the phenomenon concerned as something objectionable, regardless of any weighting that may be assigned to it. Some of the experts consulted by the Committee referred specifically to the fact that in some cases it is both uncontroversial and even advantageous to reuse a text verbatim, for example in the case of definitions or when describing methodologies and instruments. This more nuanced approach is also found, for example, in the *Publication Manual* of the American Psychological Association,7 which has the following to say regarding self-plagiarism:

‘Just as researchers do not present the work of others as their own (plagiarism), they do not present their own previously published work as new scholarship (self-plagiarism). There are, however, limited circumstances (e.g., describing the details of an instrument or an analytic approach) under which authors may wish to duplicate without attribution (citation) their previously used words, feeling that extensive self-referencing is undesirable or awkward. When the duplicated words are limited in scope, this approach is permissible. When duplication of one’s own words is more extensive, citation of the duplicated words should be the norm. What constitutes the maximum acceptable length of duplicated material is difficult to define but must conform to legal notions of fair use. The general view is that the core of the new document must constitute an original contribution to knowledge, and only the amount of previously published material necessary to understand that contribution should be included, primarily in the discussion of theory and methodology’.

Reusing one’s own material without attribution may, however, have a number of adverse effects, although on a smaller scale than actual plagiarism:

- in the case of substantial and frequent reuse: it distorts the allocation of justifiable credit (too much credit for the author);
- it misleads the public, the editor, and/or the publisher regarding the originality of what is provided, thus potentially having a detrimental effect on confidence in science. The scope of that potential impact is, reasonably speaking, bounded by the consideration that the legitimate expectation of the public and the publisher regarding originality must always have its limitations: science is incremental and a publication is therefore never totally new or innovative, and always builds in part on previous work performed by others and often by the author him/herself.

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6 See also the similar view in: KNAW: *Wetenschappelijk Onderzoek, Dilemma’s en verleidingen* (KNAW 2005). P. 27

These adverse effects are never of such an extent that one can definitely speak of RM. If the researcher reuses his/her material without attribution on only a small scale – just a few sentences or a paragraph – then both the adverse effects mentioned are negligible or nonexistent, so that in such cases one cannot even speak of QRP. This means that small-scale reuse of one’s own texts without attribution is in general unproblematic, certainly when only short passages and texts and ideas are used in an introduction, theory development, or description of methodology. In such cases, transforming such self-repetition into a quotation accompanied by a source reference will often in fact be unusual and inelegant. If the reuse of one’s own texts without attribution becomes more extensive, one first arrives at a stage at which it is rather inelegant but cannot really be classified as QRP. If, however, a researcher reuses his/her own texts or ideas without attribution to such an extent that the above-mentioned adverse effects can occur, then one is indeed dealing with a case of QRP. The latter also applies to the reuse of empirical research results without attribution. This is more problematic than the reuse of texts or ideas in an introduction, theory development or description of methodology, not only because the innovativeness of scientific publications often concerns specifically the research results – an aspect where editors and publishers are highly critical – but also because it can lead to distortion of the research results.  

These considerations introduce nuances into a grey area, but they do not set any absolute limits that are easy to apply in all circumstances. Here too, the eventual assessment must take place, within a framework such as that outlined above, by peers who are sufficiently familiar with the discipline concerned.

C. Reuse of material produced jointly with co-authors

There is hardly any discussion in the (international) literature of the reuse of material that a researcher has written in collaboration with co-authors. This matter is not addressed in the various codes of conduct, nor is it dealt with in descriptions of specific cases. It is nevertheless worth devoting a few words to it here because it involves a type of reuse that can give rise to specific issues of integrity.

C.1. Reuse of jointly produced material with attribution

The same kinds of issues may arise with this kind of reuse as with the other two types of 'reuse with attribution' (A.1 and B.1). In fact, reusing publications produced jointly with co-authors is an intermediate form of reuse of one's own work and of the work of others.  

C.2. Reuse of jointly produced material without attribution

Reusing someone else’s work without attribution constitutes plagiarism – and therefore amounts, in principle, to research misconduct – but reusing one’s own work without indicating the source is not – at least in some cases – considered problematical. However, reusing texts written in collaboration with co-authors is a more complex matter. This has to do with the somewhat hybrid, and in practice not always equal, status of co-authorship. Formally speaking, each of the co-authors is the owner (or co-owner) of the entire publication, with a reference to that publication by any of the co-authors constituting self-citation. Reusing jointly produced work, however, involves the reuse of both one’s own and other people’s material. This second aspect might be a reason for imposing an attribution rule in all cases. The first aspect means, however, that deviating from that rule is in certain cases acceptable, certainly where only short passages are concerned.

Moreover, regardless of the formal status of the co-authorship, the contribution made by the co-authors is not always actually equal, and it may or may not be possible to demarcate someone’s contribution as being his or her ‘own’. In some disciplines, there may be a large number of co-authors, with the first author listed – or sometimes the last – being the true auctor intellectualis of a publication and deserving the credit if later research builds on that publication. A third, fourth or fifth author will not really object, generally speaking, if the first (or last) author reuses texts in new articles without attribution, whereas in the converse situation the first (or last) author might well find that problematical.

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8 In many empirical disciplines, for example, it is customary to carry out meta-analyses involving the summarising analysis of a large number of empirical studies by different research groups. If the reuse without attributing the source is not recognised, some research results may be included in the meta-analysis two, three, or even more times. This will then lead to the conclusions of the meta-analysis being distorted, with a consequently detrimental impact on the scientific content. Systematic reuse of research results without indicating the source can therefore be classified as RM, even when it is one's own research results that are concerned.

9 Publications (or parts of publications) may be translated and republished in order to enlarge the area of distribution. Needless to say, the original source must then be indicated.
For this kind of reuse too, it is therefore impossible to set out precise rules or dividing lines that will apply in all cases. In general, however, one can say that precisely because the interests of other people (i.e. the co-authors) are involved, the potential adverse effects are in this case greater than when a researcher reuses his/her own work without attribution. Apart from the adverse effects referred to in B.2, insufficient credit may be also accorded to the co-authors, thus a detrimental effect on others. With this kind of reuse, there is a greater likelihood of QRP, and one must be more cautious than when reusing texts that are entirely one’s own without attribution. A sensible option would be to make attribution a general rule. In other words, the hybrid status of co-authorship requires additional caution as regards avoiding QRP. At the same time, however, that hybrid status also makes it difficult to classify cases of reuse without attribution as ‘plagiarism’. Where one is oneself a formal co-owner, it is not possible to speak of outright theft or appropriation.

Limits to this advisory memorandum
Given the limited scope of this advisory memorandum, a number of relevant issues have not been covered:
- The scientific-ethical and legal (copyright) aspects of the problems discussed in this memorandum are two areas that only partly overlap. The Committee has disregarded the copyright aspects.
- The relationship between quotations, citations and alleged perverse incentives within the system of scientific assessment – specifically the length of publication lists and the score on citation indices – was mentioned during some of the discussions, but it falls outside the scope of this advisory memorandum.
- It goes without saying that there are major differences between the publication cultures of different scientific disciplines. The Committee has seen various examples showing that reuse without attribution is more common in some disciplines than in others, and that standards for acceptable reuse can vary greatly from one discipline to another. At the same time, the Committee has not been able to analyse that aspect systematically to a sufficient extent. Nevertheless, this provisional finding does emphasise the necessity of peers always playing a major role in assessing and evaluating reuse.
- Publishers and editors of scientific journals sometimes formulate guidelines that go some way towards determining the applicable standard. Such guidelines can be both facilitatory and restrictive as regards the reuse of previously published material. Here too, the Committee has been able to form a picture of the situation, but that picture is insufficiently detailed for a verdict to be given in the present advisory memorandum.
- ‘Plagiarism scanners’ – software programs that can help detect plagiarism – are used by publishers of scientific journals, research integrity officers, scientific integrity committees, journalists, and also researchers themselves. Such software currently has all kinds of limitations – for example when it comes to tracing the reuse of publications in other languages and/or publications that are not publicly accessible – and can also have undesirable side-effects, including strategic behaviour. Plagiarism scanners also ignore the fact that in some scientific disciplines, not all of the texts traceable on the Internet are considered to be independent publications within that discipline. The Committee discussed this matter with a number of those consulted, but the limited time available meant that it did not investigate the phenomenon of plagiarism scanners in depth. For the time being, it would seem justifiable to conclude that these programs are a useful initial indicator that reprehensible reuse of previously published material has perhaps taken place, but in all cases careful substantive investigation is necessary before one can determine whether, or to what extent, there is in fact a case of QRP or RM.
- The prevention, monitoring, correction, and sanctioning of incorrect quotations and citations cannot be enforced by means of detailed regulations; instead, they thrive within a scientific climate with the right system of checks and balances. This means that science education organisations, scientific role models, research team leaders, administrators, reviewers, editors, publishers, research integrity officers, integrity committees and, above all, authors themselves all need to shoulder their responsibility. This point has not been elaborated in the present advisory memorandum, but it does constitute an invitation to all these parties.
CONCLUSION

Researchers are entitled to have their work interpreted within the applicable context and to be assessed on the basis of careful consideration of the nature, reasons, and effects of their actions. With that in mind, this advisory memorandum has attempted to provide greater clarity regarding the limits and gradations in the reuse of texts, ideas, and research results.

The only code of conduct that is mandatory for Dutch researchers – the VSNU's *Netherlands Code of Conduct for Scientific Practice* – addresses solely the problem of plagiarism and not all the various other types of reuse. This leads to two conclusions. The first is that the Code requires supplementation and articulation as regards the issue of reuse – with or without attribution – of previously published material. The second conclusion is that caution should be exercised when assessing publications from the past on the basis of non-existing rules on reuse, certainly when – as this advisory memorandum demonstrates – such 'unwritten rules' include the necessary shades of grey.

The Committee is not under any illusion that this advisory memorandum will dispense with all the problems. The debate must and will continue. Research misconduct (RM) and questionable research practices (QRP) must be combated and prevented, and the rules in this regard need to be sufficiently clear and to be shared and internalised across a broad front. At the same time, the undeniable multiplicity of shades of grey demands restraint in imposing all too many rules, and also – above all – fair and transparent procedures when suspicion arises that certain rules have been violated.