Possible forms of legal protection: an EU legal perspective
Dietrich, N.; Guibault, L.; Margoni, T.; Siewicz, K.; Wiebe, A.

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2. Possible forms of legal protection: An EU legal perspective

2.1 Copyright

In the EU, as well as in a total of 166 countries, the Berne Convention, first signed in 1886 and last amended in 1979, is the international instrument of reference for copyright protection. With the original remit of offering a remedy for the lack of international recognition of national copyright protection, the Berne Convention evolved and set the stage for a minimum amount of protection that all members of the Berne Union should implement, together with basic principles such as those of national treatment and absence of formalities. More recently, the WIPO Copyright Treaty (WCT) of 1996 and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) of 1994 have contributed to expand the Berne framework to “new” subject matters such as software and databases among others, and new forms of protection such as technological protection measures. Accordingly, the EU copyright law has developed around the framework established by those international treaties (of which all EU Member States are signatories, in the case of the WCT, and in the case of TRIPs the EU is a signatory member in its own right) and their principles are enshrined mainly in Directives 91/250/EEC on the legal protection of computer programs, 92/100/EEC on rental and lending rights, 93/83/EEC on satellite broadcasting and cable retransmission, 93/98/EEC on the term of protection, 96/9/EC on the legal protection of databases, 2001/29/EC on the harmonisation of copyright and related rights in the information society, 2001/84/EC on the resale right, and 2012/28/EU on certain permitted uses of orphan works.

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15 See the Berne Convention for the protection of literary and artistic works of 9 September 1886, last amended on 28 September 1979. The World Intellectual Property Organization (WIPO), the UN agency custodian of the administration of the Berne Convention, reports that as of 2013 the total number of signatory countries of the Berne Convention is 166, which is lower than the total number of WIPO participants (185), but considerably higher than the signatories of the WIPO Copyright Treaty (WCT) and of the WTO’s TRIPs Agreement (reported to be 90 and 158 respectively, as of 2013); For figures consult http://www.wipo.int/treaties/en/statistics (last accessed 06/2013) and http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm (last accessed 06/2013).

16 WCT signed 6 September 1952.
17 TRIPs signed 15 April 1994.
20 Hereinafter also referred to as the Database Directive.
21 Hereinafter also referred to as the Info Directive.
In addition to these eight directives, there is a proposal for a directive on collective management of copyright and related rights and multi-territorial licensing. The term “work of authorship”, which is very important in the sphere of copyright protection, is not precisely defined by any of those directives, and the minimum levels of originality/creativity required to qualify for protection are present for only a few of the subject matters contained in the directives referred to above. However, the ECJ has recently applied such a parameter in a more horizontal way. In fact, the concept of originality in copyright law has been harmonised at the European level with respect to software, databases and photographs, and the same criterion was recently extended to all kinds of works through the interpretation of the ECJ. The Infopaq decision, as later followed in Bezpečnostní softwarová asociace and other subsequent cases, established that a work is original if it is the “author’s own intellectual creation”. In the Infopaq decision, the Court further clarified that the originality of a work must be assessed through its components:

Regarding the elements of such works covered by the protection, it should be observed that they consist of words which, considered in isolation, are not as such an intellectual creation of the author who employs them. It is only through the choice, sequence and combination of those words that the author may express his creativity in an original manner and achieve a result which is an intellectual creation.

In the Football Dataco case, the Court added that:

the fact that the setting up of the database required, irrespective of the creation of the data which it contains, significant labour and skill of its author, as mentioned in section (e) of that same question, cannot as such justify the protection of it by copyright under Directive 96/9, if that labour and that skill do not express any originality in the selection or arrangement of that data.

The Berne Convention, while silent on the level of creativity, offers in its Article 2 a non-exhaustive but quite detailed list of protected works, which includes:

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23 Article 1(3) Software Directive.
24 Article 3(1) Database Directive.
any production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature; ... photographic works to which are assimilated works expressed by a process analogous to photography; ... illustrations, maps, plans.\textsuperscript{32}

Hence, copyright protects literary and scientific works such as articles, papers, and other types of publications in the scientific field. Whereas scientific publications virtually always attract copyright protection under the copyright laws of the Member States of the EU, the individual research data and the datasets containing them may not so easily fall under the copyright regime. Since copyright does not protect mere facts and ideas, but rather applies to the original expression of ideas, research data is not likely to qualify as protectable subject matter for lack of originality.

To be eligible for copyright protection, collections of data, tables and compilations must therefore show a sufficient degree of originality in their selection and/or arrangement\textsuperscript{33}. Whether collections of scientific research data meet the criterion of originality is a question to be determined on a case-by-case basis. However, if the selection and arrangement of the contents of a scientific database are dictated by technical factors or imperatives of accuracy and exhaustiveness, then the author can exercise little to no creativity or originality in the choice, sequence and combination of the data in the collection. Scientific databases are therefore in most cases not likely to meet the threshold for copyright protection.

\section*{2.2 Related rights}

Connected to copyright, but of a different legal nature, are the so-called \textit{neighbouring rights} or related rights. They present a heterogeneous category inspired by the willingness to offer some sort of protection to activities that are not original/creative, but are somehow connected to original/creative activities. Their justification and scope vary significantly, not only between the rights themselves, but also with respect to the jurisdiction where they have found recognition, if any.

\textsuperscript{32} See Article 2(1) Berne Convention.

\textsuperscript{33} Database copyright protection depends on originality with regard to the selection or arrangement on the international level. Article 2, para. 5 Berne Convention (AND) has been “revised” by Article 10, para. 2 TRIPS (OR); a change reflected also in Article 5 WCT and Article 3(1) Database Directive.

Traditionally, at the international level these rights are rooted in the Rome Convention\(^3\), which offers protection to performers, producers of phonograms, and broadcasting organisations. To these three “traditional” related rights, many others have been added over time, with wide variations regarding subject matter and geographical location.

Many of these related rights, whether pertaining to the traditional three or to a newer kind, are not usually triggered in the academic environment, as exemplified by the cases of performers’ rights, phonograms producers’ rights, fixation of the first master of a movie, or broadcasting signals rights, among others. However, one of these rights, present in the European legislation and left to each Member State to implement, is worth mentioning as it might be of some – though very limited – relevance. Some EU countries offer protection to scientific and critical editions of public domain works, that is, to the non-original rearrangement of out-of-protection manuscripts. This protection is limited to the critical edition and does not extend to the critical apparatus. This rather peculiar form of protection is, however, limited to the case of sources, such as manuscripts, books, music compositions and similar, which, as a result of study by scholars, are re-proposed in a different form from the one previously thought of as the original\(^3\). However, mere research data (see above Chapter 1) could hardly fall into this category. The related right of critical editions can be of some relevance in very specific situations and therefore deserves to be mentioned. However, for the scope of this research, and in the light of its marginality, it will not be analysed any further.

Another related right that might be relevant in the academic environment could be connected to photographs in all those jurisdictions that distinguish the photographic work of art – protected by usual copyright rules – from mere photographs, which are protected by a related right whose scope is limited in comparison to copyright. In the present case, however, once again we are observing a specific protection afforded to material that could only potentially form part of research data, since diagrams and tables would not fit into such a category. An example could be shots taken of a seed over a specific time interval to observe its germination under specific temperature conditions. Such pictures, considering that angle, focus, shutter, speed, light, are fixed for all the samples taken, do not vary over time, and certainly do not aim at any artistic representation. Therefore, such pictures are not protected by copyright, but could represent the proper subject matter for mere photographs in those countries recognising such protection\(^3\).

\(^3\) See Rome Convention for the protection of Performers, Producers of Phonograms and Broadcasting Organisations, signed 26 October 1961.


\(^3\) See for example the Italian Supreme Court, Corte di Cassazione 12-03-2004, n. 5089, requesting a personal and individual expression of the author, although the request of creativity remains at a minimum.
There is, however, a right considered as related to copyright in some jurisdictions and as autonomous by others, that is specifically regulated at the EU level by a directive on database protection and that is of utmost relevance in our case: a right protecting non-original databases, the *sui generis* database right (SGDR).

### 2.3 Database Directive

The SGDR is a right created by the European legislator to offer protection to non-creative databases. The Database Directive provides for a double layer of protection to databases: (a) copyright when the selection or arrangement of the database represents its author’s own intellectual creation – protection that covers only the database structure, not its content; and (b) the SGDR, which protects the content of the database when there has been a substantial investment in the obtaining, presentation or verification of the data, from acts of extraction (i.e. copying) and re-utilisation (i.e. redistribution, communication to the public, etc.) of the whole or a substantial part of the contents of such database. These two forms of protection are cumulative when the prerequisites for both are met.

Databases play a central role in the field of scientific research under analysis in this study and their legal protection will strongly influence the actions that scientists and researchers are allowed to take with the data currently available and with those subsequently created. Crucial for the achievements set forth in the Commission Communication and in general in any open access enterprise is the choice of the proper licences for research data.

#### 2.3.1 The *sui generis* database right

As already mentioned, collections of scientific data may be protectable under the European SGDR. Through Article 7 of the Database Directive, as implemented in the legislation of the Member States, the maker of a database demonstrating a substantial investment (assessed qualitatively and/or quantitatively) in either the obtaining, verification or presentation of its contents has the exclusive right to prevent the extraction and/or re-utilisation of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database. Like copyright protection, the SGDR arises automatically, without any formal requirement, at the moment the database is completed or disclosed to the public.

In the context of scientific research, the wording of Article 7 of the Database Directive raises two main questions: first, does the scientific database show a substantial investment relating to the “obtaining, verification or presentation” of the content of that database? And secondly, should the answer to the first question be positive, does a research institution or the individual researcher qualify as the

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38 See Article 7(4) Database Directive.
maker of the database, and therefore as a rights owner, if such database has been put together through public funding?

2.3.2 Substantial investment

With respect to the first question, the terminology of the Database Directive has given rise to numerous legal disputes before the national courts, which have led in turn to a number of references to the ECJ for preliminary rulings on the interpretation of the Directive’s provisions. Note that so far disputes have almost exclusively involved commercial entities, with a public entity here and there, but as yet only one research or educational institution. The idea behind the Directive, as witnessed by a number of recitals, is to reward considerable investments of substantial human, technical, professional and financial resources in the making of databases or, in the words of the ECJ, the promotion of the establishment of storage and processing systems for existing information. In particular, the ECJ, deciding on the correct reading of the criteria for protection by Article 7, has given a narrow interpretation of the Directive’s requirement that the database shows a substantial investment, assessed qualitatively or quantitatively, in either the obtaining, verification or presentation of its contents. In the landmark British Horseracing Board and Football Fixtures cases, the Court ruled that the term “obtaining” excludes the costs incurred in the creation of new data (such as generating fixtures lists) from being considered relevant to satisfy the requirement of the substantial investment. Paragraph 31 of the British Horseracing Board decision reads as follows:

[i]he expression investment in ... the obtaining ... of the contents of a database must ... be understood to refer to the resources used to seek out existing independent materials and collect them in the database, and not to the resources used for the creation as such of independent materials. The purpose of the protection by the sui generis right provided for by the directive is to promote the establishment of storage and processing systems for existing information and not the creation of materials capable of being collected subsequently in a database.

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40 See for examples Recitals 7, 39 and 40 of the Database Directive.
41 See ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organization Ltd (BHB), [2004] ECR I-10415.
42 Ibid.
In so holding the Court demonstrates adherence to a “utilitarian” reading of the function of the SGDR, as suggested by Recitals 7, 9–12, 39 and 40, clearly indicating the aim to attract more investment in the given sector through the creation of such a new right.

It is important to underline how the Court also states that “checks ... made at the stage of creating the list ... in question ... constitute investment in the creation of data and not in the verification of the contents of the database”, thereby rejecting the argument that the verification of data in the database content during the creation process could represent the required substantial investment.

Another aspect that derives from the distinction between the creation and the obtaining of data is the problem of the so-called sole-sourced databases and the strong anti-competitive effect that such situations would cause. In particular, as has been noted, the first draft of the Directive included a scheme of compulsory licences with the aim of avoiding such anti-competitive situations. However, it was not retained in the final version of the Directive. The ECJ, by distinguishing between creation and obtaining, offers a solution that helps to mitigate the problem described by denying protection to databases where data is entirely created from within the enterprise that claims SGDR (a typical case of sole-source). Such a dichotomy between creation and obtaining recalls the copyright dichotomy between idea and expression, where only the latter is protected, while the former is in the public domain. Actually, it is precisely because the former (being ideas or created data) are in the public domain that the latter (expressions and collected data) can exist and be the object of protection.

But of course, as in any case of general declamations, one thing is to find a good formula at the theoretical level, as the ECJ did with the distinction between creation and obtaining of data, whereas a completely different issue is to apply that formula to specific cases, such as that of research data, under analysis here.

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45 “(9) Whereas databases are a vital tool in the development of an information market within the Community; whereas this tool will also be of use in many other fields;

(10) Whereas the exponential growth, in the Community and worldwide, in the amount of information generated and processed annually in all sectors of commerce and industry calls for investment in all the Member States in advanced information processing systems;

(11) Whereas there is at present a very great imbalance in the level of investment in the database sector both as between the Member States and between the Community and the world’s largest database-producing third countries;

(12) Whereas such an investment in modern information storage and processing systems will not take place within the Community unless a stable and uniform legal protection regime is introduced for the protection of the rights of makers of databases.”.


49 See Davison and Hugenholtz, note 47 above, p. 115.
In fact, although we have seen that costs incurred for creating data are not considered as part of the substantial investment in making a database, the costs necessary for the verification of the accuracy of the data (with the exception of the observations above) and for the presentation of such data to third parties do count in the assessment of whether the investment was substantial\textsuperscript{50}. The results of a practical application of the ECJ principles are particularly complex regarding the distinction between obtaining and creating data and regarding the concrete determination of the investment necessary to trigger the protection. This remains an evaluation that must be made on a case-by-case basis. This is particularly evident when dealing with scientific data, such as meteorological data or genetic sequences, which are not easily ascribable to one of these two categories\textsuperscript{51}. Applying the criteria developed by the ECJ to scientific databases, it is unclear whether the majority of research databases meet the formal requirements for the *sui generis* right. Many collections of data may arguably remain outside the scope of protection because the materials constituting the database are merely created – and not obtained from already existing sources – and the threshold of substantial investment is not reached by further investing either in the verification or the presentation of such contents. However, the implicit unpredictability of this condition, which leads to a considerable amount of uncertainty regarding the overall protectability of research data and databases by the SGDR, suggests deepening further our analysis of the requirements for protection and the connected thresholds regarding infringement, as this would prove extremely helpful when facing practical cases.

2.3.3 Substantiality: investment and infringement

As we have seen, following the Directive’s wording and the interpretation that the ECJ has consistently offered, an investment needs to be made in the obtaining, verification and presentation of the data, but not in the creation. Such interpretation is to be construed strictly since also those investments made in the verification of the data during the creation phase of the data do not qualify for protection.

Additionally, another requirement is necessary for protection as not every investment that has the aforementioned characteristics is acceptable: it needs to be *substantial*. Substantiality is a central concept for the SGDR as it is not only the parameter for protection, but it is also the threshold for infringement. However, unsurprisingly, no indication is given in the Directive as to the specific characteristics or amount required of an investment or an infringement in order to be considered substantial. The Directive states that substantiality can be evaluated quantitatively or qualitatively in order to qualify the investment as deserving protection.


\textsuperscript{51} See Davison and Hugenholtz, note 47 above, p. 115.
This is a particularly important aspect (or flaw) of the Directive since such substantiality not only determines the existence of an SGDR but also the renewal of it. In fact, any substantial change that implies a substantial investment “shall qualify the database resulting from that investment for its own term of protection”\(^{52}\). Thanks to the ECJ, we know, however, that a substantial investment does not correspond to the economic value of the database. The reward scheme and incentive-function work if they are parameterised to what has been invested, not to the final result\(^{53}\). However, at least at the EU level, little more guidance than that described is offered to evaluate the substantiality of the investment. There definitively needs to be more than a negligible amount of time, resources or financial assets to qualify as substantial. But they do not need to be particularly relevant or essential, at least at the EU level. We will see below what specifications Member States add in this regard.

Article 7 offers protection against acts of extraction or re-utilisation of the whole or a substantial part of the database, evaluated qualitatively or quantitatively. The same article, in its 5th section, clarifies that the repeated and systematic extraction and/or re-utilisation of insubstantial parts of the contents of the database, implying acts which conflict with a normal exploitation of that database or which unreasonably prejudice the legitimate interests of the maker of the database, shall not be permitted. Extraction of insubstantial parts of the database does not infringe the SGDR. The sense of this norm is to avoid repeated extraction of insubstantial parts, which leads to the reconstitution of the database as a whole or as a substantial part thereof. The partial re-proposition of the three-step test has to be interpreted in the sense that only if such insubstantial extractions once leading to a substantial reproduction also conflict with the normal exploitation of the database is there an infringement\(^{54}\). In the BHB decision the ECJ had the opportunity to clarify that there is no infringement of Article 7(5) in a case of daily takings from the BHB database of data relative to that single day, as there is no possibility that, through the cumulative effect of these acts, it will be possible to reconstitute and make available to the public the whole or a substantial part of the contents of the BHB database and thereby seriously prejudice the investment made by the BHB in the creation of the database\(^{55}\).

\(^{52}\) See Article 10(3): “Any substantial change, evaluated qualitatively or quantitatively, to the contents of a database, including any substantial change resulting from the accumulation of successive additions, deletions or alterations, which would result in the database being considered to be a substantial new investment, evaluated qualitatively or quantitatively, shall qualify the database resulting from that investment for its own term of protection.”.

\(^{53}\) See Davidson and Hugenholtz, note 47 above, p. 115; ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organisation Ltd (BHB), [2004] ECR I-10415; Beunen, note 50 above, p. 139.


\(^{55}\) Ibid. (BHB), paras 83–95.
**Substantiality** is a parameter that has to be measured against the original database on which the act of extraction has been performed, and not towards a newly created database or any other act based on the extracted part. In the case of a small database a quantitatively substantial part can be quite small in absolute terms, and definitively very small – insubstantial one could say – if compared to a much bigger, new database. However, such considerations play no role in assessing infringement, because it results from the act of extraction and/or re-utilisation (of a substantial part) of the original database. As long as there is a protected database, any extraction of a substantial part measured against it will constitute an infringement of the original database, regardless of how much bigger the new database will be. Also, the commerciality of the extraction plays no role in the determination of the infringement. There must be a correlation, however, between the substantiality of the investment and that of the extraction: only as long as the part extracted represents a substantial part of the investment, can there be an infringement: “… the assessment … of whether the part at issue is substantial must … refer to the investment in the creation of the database and the prejudice caused to that investment by the act of extracting or re-utilising that part.”

This holds true both for quantitative and for qualitative parts – with the former focusing on the volume of the data extracted and the latter on the scale of the investment in the extracted data.

Accordingly, in the case of databases composed of research data, in order to determine whether a given act of extraction is substantial and therefore infringing, the comparison of the extracted (copied) amount of data has to be made against the original database. A completely different consideration is proof of the infringement, and how hard it could be to obtain it in cases where the extracted data is reassembled in a way that makes it hard to identify it, especially coming from a given protected database (since protected databases need to focus on the obtaining of the data, in many instances such data will already exist in other unprotected repositories, except of course in the case where protection is triggered by the investment in the verification and presentation). However, such latter consideration on the obtaining of proof is a matter of factual analysis, which has to be decided at trial.

More recently the ECJ had the opportunity to revisit the concept of infringement and clarified that it is occasioned by any type of extraction of a substantial part of a protected database, while the realisation of a physical copy of the data is

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56 See ibid., para. 70.
57 See Beunen, note 50 above, p. 186; ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organization Ltd (BHB), [2004] ECR I-10415, para. 47.
58 See ibid. (BHB), para. 48.
59 Ibid., para. 69.
60 Ibid., paras 70 and 71.
not necessary. The Directmedia case is particularly relevant in this instance as it relates to the reuse by a private company of a database (or rather a substantial part thereof) created within the academic environment. Even more interesting, the decision of the ECJ is based on the uncontested assumption that a private company (Directmedia) had access to the database, and consulted it (an act indisputably permitted by the Directive). Further, and here lies the problematic aspect, Directmedia created a new database that incorporated substantial parts of the original, albeit not a physical or mechanical copy of it. With such a referral the German Federal Court of Justice (BGH) aims to ascertain whether the concept of extraction "covers the operation of transferring the elements of one database to another database following visual consultation of the first database and a selection on the basis of a personal assessment of the person carrying out the operation or whether it requires that a series of elements be subject to a process of physical copying." The ECJ sustains the interpretation that no physical copy is necessary to originate infringement, and that the transfer of elements from one database by visual consultation and selection on the basis of personal assessment plays no role in the determination of the infringement. This aspect is particularly relevant for the subject of our analysis. In many scientific and academic environments it might seem natural that the mere consultation of a series of data should not cause any harm to any legally protected situation. This is actually a correct assumption and for the case of the SGDR the ECJ stated that “the protection of the sui generis right concerns only acts of extraction and re-utilisation [which do not] cover consultation of a database”. The issue under consideration in the present case, however, lies exactly in between mere consultation and extraction: once a party has (legally) consulted a database, what is he allowed to do with the information he carries away with him as the result of the act of consultation? In the opinion of the ECJ no act will lead to the reconstitution of the database or a substantial part thereof, including in an adapted or modified form:

It is also immaterial … that the transfer of the contents of a protected database may lead to an arrangement of the elements concerned which is different from that in the original database. … an unauthorised act of copying, accompanied by an adaptation of the con-

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61 See ECJ Case C-304/07, Directmedia Publishing GmbH v Albert-Ludwigs-Universität Freiburg (Directmedia), [2008] MMR 2008, 807; See also the AG opinion delivered on 10 July 2008.
62 See ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organization Ltd (BHB), [2004] ECR I-10415, para. 54.
63 German: Bundesgerichtshof (BGH).
64 See ECJ Case C-304/07, Directmedia Publishing GmbH v Albert-Ludwigs-Universität Freiburg (Directmedia), [2008] MMR 2008, 807, para. 22.
65 See ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organization Ltd (BHB), [2004] ECR I-10415, para. 54.
66 Ibid., AG Opinion, para. 29.
In light of the present analysis we can safely affirm that the Directive together with constant case law construes the concept of “extraction” in a broad manner, so as to include any medium and form, regardless of the nature and purpose of such extraction. The key concept in order to determine whether an infringing extraction has occurred is the “transfer” of data, which needs to be of the whole or a substantial part of the original database, but need not be a physical or mechanical act of copying. Such transfer, the Court adds, does not need to be permanent either, for a temporary transfer also infringes the SGDR. Of course, the mere fact that the same elements are present in the original database as well as in the allegedly copied one is not sufficient in itself to prove infringement. The protection offered by the SGDR, similar to that offered by copyright, is against acts of copying (rectius: extraction), therefore an independent database consisting of similar or even the same elements (a whole or a substantial part) can be not infringing if it represents an independent product. The fact that the SGDR does not protect created data implies that an SGDR-protected database has to have obtained the data from somewhere else, therefore the same obtaining can have been independently carried out by a second non-infringing database maker from a different, or even from the same, original, unprotected, source. As the ECJ had the opportunity to enunciate: The fact … that the physical and technical characteristics present in the contents of a database also appear in the contents of another database may also be interpreted as an indication of the existence of a transfer between the two databases and therefore, of an extraction. However … it is [for the national court] to assess whether that coincidence can be explained by other factors, such as the use of identical sources when the two databases were being set up and the presence of those characteristics in the common sources.

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68 See ECJ Case C-545/07, Apis-Vristorich v Lakorda (Apis), [2009] GRUR Int. 2009, 501.
69 See ibid., para. 42; The Court clarifies though that the permanent of temporary nature of the transfer may reflect on the levels of awarded damages if in accordance with Member State legislation.
70 See ibid., para. 51; also relevant, para. 52: “It should also be stated, as the Bulgarian Government does, that the fact that materials obtained by the maker of a database from sources not available to the public also appear in a database made by another person is not, as such, sufficient to prove that there has been a transfer from the first database to the second, having regard to the possibility that those materials might also have been collected directly by the maker of the second base from the sources used by the first maker. That fact may, none the less, constitute circumstantial evidence of extraction.”.
2.3.4 Scope of protection

Where the “obtaining, verification or presentation” of research datasets does manifest the substantial investment necessary to qualify for protection, the *sui generis* protection confers two transferable rights on the maker of a database: the right of extraction and the right of re-utilisation of substantial parts of the database. The Directive defines them as follows:

“Extraction shall mean the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form; while re-utilisation shall mean any form of making available to the public all or a substantial part of the contents of a database by the distribution of copies, by renting, by online or other forms of transmission.”

These two concepts have received a broad interpretation from the ECJ. In the *Directmedia* case, as seen above, the Court found that an act of “extraction” occurs when all or part of the contents of the database concerned are transferred to another medium, whether of the same or of a different nature. Such a transfer implies that all or a substantial part of the contents of a database can be found in a medium other than the original database. In the view of the ECJ, it is irrelevant whether the transfer is based on a technical process of copying the contents of a protected database or on a simple manual process; similarly, it is irrelevant that the transfer of the contents of the database may lead to an arrangement of the elements that is different from the one in the original. The Court adds that the transfer of material from a protected database to another database following an on-screen consultation of the first database and an individual assessment of the material contained in that first database is also capable of constituting an extraction.

In the *BHB* decision, the Court ruled that the concept of “re-utilisation” must be understood broadly, as extending to any act, not authorised by the maker of the database protected by the *sui generis* right, of distribution to the public of the whole or a part of the contents of the database. The Court observed that the nature and form of the process are of no relevance in this respect.

The protection under the *sui generis* right lasts for 15 years from 1 January of the year following the date on which the database was completed. The term of protection for a database may start anew under two conditions, both dealing with the term “substantial”. The first one is represented by a substantial modification of the contents of the database, evaluated either qualitatively or quantitatively, which can consist in additions, deletions or alterations (including rearrangement of...

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72 Ibid. (Directmedia), para. 36.
the contents). Secondly, this substantial modification must represent a substantial investment, evaluated qualitatively or quantitatively. This is one of the most controversial and criticised provisions of the Directive since it apparently offers grounds for a perpetual protection of the databases.  

Finally, it is worth pointing out that, according to Article 11 of the Database Directive, only natural persons who are nationals of a Member State or who have their habitual residence in the territory of the EU can benefit from the database right. Furthermore, companies and firms are also entitled to such protection if they are formed according to the law of a Member State and have their registered office, central administration or principal place of business within the EU. Article 11(2) clarifies that where a company or a firm has a registered office only in the territory of the EU, its operations must be substantially and durably linked with the economy of a Member State. In other words, the protection of the SGDR is not only unique to Europe in that it is conferred only on EU nationals, whether natural or legal persons, but also because no other major competing partner of the EU has set up a comparable regime of protection for non-original databases.

The complexity of the rights status of research data arguably has the potential to adversely affect the reuse opportunities of collections of scientific data, given the difficulty – both for research institutions making the database available and for prospective reusers – in determining each time whether a certain database is covered by the *sui generis* right and to what extent re-utilisation and extraction can take place freely.

2.3.5 The beneficiary of the protection

Should research datasets indeed show a level of substantial investment in the “obtaining, verification or presentation” of the data to qualify for protection, the second question to be addressed is who qualifies as the maker of the database. More specifically, does a research institution, or the individual researcher, benefit from the protection even if the investment is made possible only through the injection of public funding?

Recalling the wording of Recital 41 of the Directive, the maker of the database is the person who takes the initiative and the risk of investing. Whether the research institution or the individual researcher is to be considered as the “maker of the database” may be a question of fact. It may depend on such factors as the financing structure of the university, the department or the research project, the conditions of the grant or subsidy and the legal relationship between the researcher and his institution. It may also depend on how Recital 41 of the Directive has been implemented in national legislation, if at all, and whether it puts the accent on the initiative taker, the risk of investing or on another element.

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We will see below that some national implementations present a specific and interesting position in this regard, although probably unique within the EU. At the EU level, the ECJ recently rendered a decision in the *Compass-Datenbank* case\(^{75}\) in which it indirectly confirmed that public entities are entitled to own and exercise *sui generis database rights*. The referring Austrian court asked, in essence, whether the activity of a public authority in permitting interested persons to search for data and in providing them with printouts thereof in return for payment, while prohibiting any other use of that data by relying on its *sui generis database right*, constitutes an economic activity of an undertaking within the meaning of Article 102 TFEU\(^{76}\). The Court answered in the negative. Incidentally, the Court declared that:

> a public entity which creates a database and which then relies on intellectual property rights, and in particular the abovementioned *sui generis* right, with the aim of protecting the data stored therein, does not act, by reason of that fact alone, as an undertaking. Such an entity is not obliged to authorise free use of the data which it collects and make available to the public\(^{77}\).

From this ruling it seems that the Court does not see any grounds for preventing public bodies from qualifying as makers of a database due to the mere fact that the substantial investment is made through public funding. The ECJ exercised judicial restraint in the *Compass-Datenbank* case and refrained from examining the level of investment that might have given rise to protection. So the case does not tell whether the investment made by the Austrian government demonstrated the required “substantial investment” to qualify for protection. However, provided “substantial investment” is directed to obtaining, verifying and presenting the data, the fact that scientific databases are produced with public funding should not deprive research institutions or researchers, depending on who bears the risk of investment, from benefiting from the *sui generis* protection under the European Directive (with the exception of the Netherlands, see below Chapter 2.4.3.2.2).

### 2.3.6 Exceptions and limitations to restricted acts

Regarding exceptions and limitations to the restricted acts set forth by the Database Directive – as for many other elements here analysed – two different approaches, one for copyright and the other for the SGDR, need to be developed.

Regarding copyright, it is Article 6(1) Database Directive that determines that “the performance by the lawful user of a database of any of the acts listed in Article 5 which is necessary for the purposes of access to the contents of the databases and normal use of the contents shall not require the authorisation of the author of the database”. Article 6(1) outlines the only mandatory exception re-

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\(^{76}\) Treaty on the Functioning of the European Union.

Regarding the copyright in databases listed by the Directive. The following section (2) of the same article lists three cases where Member States have the option of providing for limitations to restricted acts: (a) reproduction for private purposes of a non-electronic database; (b) use for the sole purpose of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved; (c) use for the purposes of public security or for the purposes of an administrative or judicial procedure.

Section 2 closes with a general provision (letter d) allowing other exceptions to copyright which are traditionally authorised under national law, without prejudice to points (a), (b) and (c). The article’s last section (3) introduces two steps of the three-step test (unreasonable prejudice to rightholder’s legitimate interests and conflict with normal exploitation of the database). Article 6(3)’s explicit reference to Article 9(2) Berne Convention is somewhat misleading, since the three-step test as contained in the latter only applies to exceptions to the reproduction right, whereas the exceptions to which Article 6 refers apply to all economic rights granted by Article 578.

It must be recalled here that the compulsory exception of Article 6(1) applies to all acts covered by Article 5 (i.e. temporary or permanent reproductions, translations, adaptation, arrangement and any other alteration, distribution, communication, display or performance to the public of the original or of any modified, adapted or translated parts). Therefore, those national implementations that only list some of the acts regarded are in contrast to EU law. Further, Article 6(1) only applies in the case of a lawful user, unlike the cases contained in Article 6(2). The concept of “lawful user” will be clarified below.

Regarding the limitations to the SGDR, we have to turn our attention to Article 9, which offers three cases where Member States can stipulate that a lawful user of a database does not need any authorisation in cases of: (a) extraction for private purposes of the contents of a non-electronic database; (b) extraction for the purposes of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved; and (c) extraction and/or re-utilisation for the purposes of public security or an administrative or judicial procedure. Article 9 lists a rather limited number of exceptions to the SGDR, especially if we consider that only the third case – a special case by itself – allows re-utilisation, while the first two only exempt acts of extraction (although once more the drafting technique and the use of the English language is quite lax)79. Such limited scope clashes with the rather

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78 See Hugenholtz, note 54 above, p. 326.
79 In the first sentence the reference is to both extraction and re-utilisation “... users of a database ... may ... extract or re-utilise a substantial part of its contents”, but in the following first two cases it is only made reference to acts of extraction “in the case of extraction for private purposes”.
Under a purely literal analysis it should be inferred that in cases of extraction for private purposes or for illustration for teaching or research, acts of extraction or re-utilisation are allowed: a
large scope of Article 6 exemptions to copyright in databases (especially in terms of activities exempted, all those of Article 5), as well as to the traditional exceptions to copyright contained, for example, in Article 5 Info Directive (a formal reading lists 21 different cases).

A key concept of EU database legal provisions that encompasses both Articles 6 and 9 is that of a lawful user. In fact, only a lawful user is exempted from Article 5 exclusivity for the cases of access and normal use of a database as provided in Article 6(1). Notably, the exemptions listed in Article 6(2) are not limited to lawful users but extend to anybody (therefore also to unlawful users, whatever this means). Contrarily, only a lawful user will benefit from the exceptions to the SGDR listed in Article 9. In spite of the importance and centrality attributed to it by the Directive, the concept of a lawful user finds no definition in the Directive, nor is it known in the *aquis* of international agreements in the field of copyright or other intellectual property rights. Similar, though not identical, concepts can be found in other EU directives, such as the Computer Programs Directive (“lawful acquirer”), and the Info Directive (“lawful use”). Recital 34 Database Directive offers some guidance:

“Whereas, nevertheless, once the rightholder has chosen to make available a copy of the database to a user, whether by an online service or by other means of distribution, that lawful user must be able to access and use the database for the purposes and in the way set out in the agreement with the rightholder, even if such access and use necessitate performance of otherwise restricted acts.”

A literal interpretation suggests that once the rightholder makes the database available to a user, this becomes a lawful user. In consequence, an unlawful user would be a user that has access to a database against the intentions of the rightholder. Such access, however, needs to follow the purposes and ways set out in the agreement with the rightholder. In such a case agreement needs to be interpreted in a broader manner, not reduced to the narrow interpretation of contractual agreement, which would lead to absurd results. In particular, a person or entity invoking a copyright or SGDR exception is a lawful user and can therefore benefit from Articles 6(1) and 9. Lawful users are also persons or entities that use the database as it is freely available online (websites in many instances), also in the absence of any specific terms of use, on the basis of an implied authorisation, as long as it has been published by (or with the consent of) the rightholder. Even more, purchasers of copies (digital or analogue) of the database are lawful users. However, a person obtaining an illegal copy of a database will probably not be considered a lawful user and therefore will not be able to enjoy the exceptions

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80 See Hugenholtz, note 54 above, p. 324.
listed in Articles 6(1) and 9. Such person, however, will be allowed to invoke the exceptions of Article 6(2).

Recital 52 Database Directive entitles those countries that already have a form of protection similar to the SGDR (such as the Nordic countries or the Netherlands) to retain the exceptions (usually the same as those listed by such countries for copyright purposes) also for the case of the SGDR. In these countries it would be possible to find more SGDR exceptions than those listed by the Directive.

An important provision with regard to the exceptions and limitations to both copyright and the SGDR with regard to database protection is that set forth by Article 15 entitled “Binding nature of certain provisions”, which states that any contractual provision contrary to Articles 6(1) and 8 shall be null and void.

2.3.7 SGDR and OpenAIREplus

Within the project of OpenAIREplus, a complex database of records of publications and research data is created. Unlike most of the European research projects, the aim of the project is not to gain new knowledge through basic research in the area of hard or social sciences. The OpenAIREplus project directly aims at the creation of a complex database as a research infrastructure for all information related to scientific publications resulting from EU-funded research, complemented by research data and research information. Thus OpenAIREplus is not just a tool to query other databases, but a complete database which collects data, especially metadata, about every kind of scientific publication.

The main objective of the whole project is the creation of this database. The elements of the database will be systematically and methodically arranged and individually accessible electronically over the internet. For its creation, a great amount of technical, human and financial effort is required. Therefore, the technical requirements and the requirement of a qualitatively and/or quantitatively substantial investment in the obtaining, verification or presentation of the contents, for obtaining sui generis protection, are clearly met.

But if the criteria for sui generis protection are met, the next important question arises: Who is the owner of such IP right? The rightholder is generally the maker of the database. According to Recital 41 of the Database Directive, the maker of the database is the person who takes the initiative and the risk of investing. In an employment relationship, the owner of the sui generis right usually will not be the natural person who creates the database, but his employer, who pays for the creation of the database and thereby carries the financial risk of the database creation. In the case of OpenAIREplus, the employers of the different researchers who create the OpenAIREplus database are different legal entities, mainly universities and research institutes. At first sight this would mean that these entities become the owners of the OpenAIREplus database right. However, it is questionable whether these entities are really the ones who take the initiative and the risk of investing. To be precise, it is not the research entities that carry the main financial
risk, but the funder of the project, in this case the European Commission. Without the European Commission’s massive funding, the database would not be created.

Nevertheless, the research entities take the initiative for the creation of the database too, due to the fact that they hand in the proposal for a project to be funded by the European Commission. Furthermore, they also bear a financial risk in investing in the database, since an EU project is generally not funded on a full-cost basis, which means that the research entities do have to raise some money by themselves.

As a result, there are plenty of indications that the European Commission as well as the project partners who contribute in a sufficient amount to the creation of the OpenAIREplus database are generally becoming co-owners of the sui generis right in this database. But neither this question nor the question as to which co-ownership rules should govern the relationship between the different entities have yet received sufficient answers.

2.4 National implementations

In the following section, we will evaluate how different Member States have implemented the EU directives and what differences still exist.

2.4.1 United Kingdom

2.4.1.1 Protection as a copyright work

One very effective method for protecting research data seems to be copyright law. The UK copyright law is regulated by the Copyright, Design and Patents Act 1988 (CDPA 1988). According to section 1(1) CDPA 1988, copyright is a kind of property right.

2.4.1.1.1 The copyright work

The central element of copyright protection is the copyright work. Therefore, it is remarkable that no legal definition of this term is given in the CDPA 1988. Section 1(2) CDPA 1988 just states that: “In this Part ‘copyright work’ means a work of any of those descriptions in which copyright subsists.” This section thereby refers to section 1(1) CDPA 1988 in which different kinds of work are named. Thus it makes sense to have a closer look at the different work categories referred to, before examining the other requirements for copyright protection.

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81 See below Chapter 2.5.1.
2.4.1.1.1 Kinds of work
Copyright law is designed to protect aesthetic and artistic creations known as *original works*, together with *derivative works*[^82]. Today, there is no formal distinction between the different categories of work; nonetheless an informal distinction can be drawn between the two general categories of subject matter.

Original works are created by authors (therefore sometimes also called authorial works). These works are named in section 1(1)(a) CDPA 1988: literary works, dramatic works, musical works and artistic works. Derivative works, on the other hand, are neighbouring rights, which refer to works created by entrepreneurs (therefore sometimes also called entrepreneurial works). These works are named in section 1(1)(b) and (c) CDPA 1988: sound recordings, films, broadcasts and typographical arrangements of published editions.

2.4.1.1.1.2 Criteria for copyright protection
The two different kinds of work have different requirements for protection. Authorial works have to be original. This requirement is explicitly mentioned in section 1(1)(a) CDPA 1988.

Originality does not mean that the work has to be inventive, novel or unique. Peterson J expressed the idea of originality in the case of *University of London Press v University Tutorial Press*[^83]:

> “The word original does not in this connection mean that the work must be the expression of original or inventive thought. The originality which is required relates to the expression of the thought. But the Act does not require that the expression must be in an original or novel form, but that the work must not be copied from another author’s work – that it should originate from the author.”

This broad vision of originality is necessary, because it is not possible to determine objectively whether a work is inventive or unique; this depends on people’s taste.

The second requirement for originality is that the work in question requires a minimum of labour, skill and effort. Behind this lies the idea that simple copying does not involve the requisite degree of activity to justify the award of copyright[^84].

The leading case on originality is *Walter v Lane*[^85]. In this case, the House of Lords decided that copyright subsists in a reporter’s transcription of a speech by Lord Rosebery, a leading politician of the day, because his creation was not a mere transcription of the speech, but had involved the expenditure of individual skill and effort.

[^84]: MacQueen, Waelde, Laurie and Brown, note 82 above, para. 2.39.
[^85]: *Walter v Lane*, [1900] AC 539.
This common law concept of copyright deviates considerably from continental copyright, which bases protection on originality in the sense that the work is the expression of the individual personality of the author. Hence, mere original creation would not be enough but some level of individual contribution has to be demonstrated. In effect, this is a higher standard.

The requirement of originality does not apply to derivative works; but copyright does not subsist in a derivative work which is, or to the extent that it is, a copy taken from a previous work in the same category. The reason for this lower standard for entrepreneurial works is that these are derivatives of existing arial works in the sense that they use or develop these works. Therefore it is simply not possible to fulfil the requirement of originality.

Copyright protection requires the work to have some tangible form. This seems obvious for derivative works such as sound recordings, artistic works and films because their existence implies tangibility. Authorial works such as literary, dramatic or musical works, on the other hand, can exist without any tangible form. Section 3(2) CDPA 1988 states that copyright does not subsist in such a work unless and until it is recorded, in writing or otherwise. This requirement means that there is no copyright, for instance, in the unrecorded spoken word; however, as soon as a recording is made (even by another person), the words have copyright and the subsequent reproduction and publication of these words may be controlled by the speaker.

Regarding the copyright protection of research data, one must note that there is no common definition of what research data is in the context of intellectual property law. Taking a broad approach, research data can be every kind of data produced in the course of scientific research, and thus no general statement can be given about the copyright protection of this data. Copyright protection depends on whether the data in question fulfills the criterion of originality or not. Copyright protection is especially relevant for the creation of scientific papers, but raw research data will normally not be protected by copyright.

2.4.1.1.2 Authorship and ownership

Authorship and ownership are, in relation to copyright, two distinct concepts, each of which attracts its own peculiar rights: the author having moral rights and the owner of the copyright possessing economic rights. One can say that there is

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86 Cf. sections 5A(2), 5B(4), 8(2) CDPA 1988.
87 Cf. MacQueen, Wacde, Laurie and Brown, note 82 above, para. 2.32.
89 Ibid.
not only one right, but the authorship and the copyright constitute two different rights of the same origin.

According to section 9 CDPA 1988 the author of a work is the person who creates it. The author shall be taken to be the producer in the case of sound recordings, the producer and the principal director in the case of films, the person making the broadcast in the case of broadcasts, or, in the case of a broadcast which relays another broadcast by reception and immediate re-transmission, the person making that other broadcast, and, in the case of typographical arrangements of published editions, the publisher. For example, the author of a work of literature is the person who writes it; the author of a piece of music is its composer and so on.\(^9\)

Copyright protection arises automatically with the creation of the work. According to section 11(1) CDPA 1988, the first owner of the copyright in the work is typically the author. However, where a work of authorship is made by an employee in the course of his employment, his employer is the first owner of any copyright in the work subject to any agreement to the contrary (section 11(2) CDPA 1988).

Copyright is a property right, and as such the owner of that right can deal with it. Therefore, copyright is generally alienable and may be transferred or assigned, in whole or in part, and the owner of copyright may license one or more specific uses of his work. However, it should be noted that even if the author is not the owner of the copyright, he still has his moral rights, which have to be respected.\(^4\)

Section 10(1) CDPA 1988 defines a “work of joint authorship” as a work produced by the collaboration of two or more authors in which the contribution of each author is not distinct from that of the other author or authors. These co-authors share the rights related to the work (cf. section 10(4) CDPA 1988).

2.4.1.1.3 Exclusive rights
The copyright owner (not the author) has some exclusive rights. These are mentioned in section 16(1) CDPA 1988: the right to copy the work, to issue copies of the work to the public, to rent or lend the work to the public, to perform, show or play the work in public, to communicate the work to the public or to make an adaptation of the work or do any of the other acts in relation to an adaptation.

A licence must be sought if these restricted acts are to be lawfully carried out by a person other than the copyright owner.\(^5\) In other words: a copyright in-
fringement is committed if one of the above-mentioned restricted acts is carried out without the permission of the rightholder.

2.4.1.1.3.1 The right to copy the work (section 17 CDPA 1988)
According to section 17 CDPA 1988, the copying of the work is an act restricted by the copyright in every description of copyright work. The meaning of copying varies depending on the nature of the work (cf. section 17(2)–(5) CDPA 1988). Copying includes the making of transient or temporary copies (section 17(6) CDPA 1988). In relation to the important work category of authorial works, copying means reproducing the work in any material form including storing the work in any medium by electronic means.

Thus copying is the permanent or temporary reproduction of a work in any material, analogue or electronic form.

2.4.1.1.3.2 The issuing of copies of the work (section 18 CDPA 1988)
Issuing copies of the work to the public means putting into circulation copies not previously put into circulation in the European Economic Area (EEA) by or with the consent of the copyright owner, or putting into circulation outside the EEA copies not previously put into circulation in the EEA or elsewhere.

The owner of the copyright has the right to be first to produce copies of the work to be available to the public. The right is therefore sometimes described as the right of *first sale* or of *distribution*. Only the copyright owner or his licensee can put a new reproduction of the work on the market96.

A limitation to this right is its “exhaustion”. The right is not applicable to any subsequent distribution, sale, hiring or loan (cf. section 18(3) CDPA 1988). Once the copyright owner has put copies of the work on the market, he should not be able to restrict further dealing with those copies. This is because he was able to get remuneration for the first act of distribution and should not be able to further restrict the free movement of goods.

2.4.1.1.3.3 The rental and lending right (section 18A CDPA 1988)
Section 18A CDPA 1988 contains a specific provision for rental and lending. In general, rental and lending is a restricted act, even if the work was put into circulation. The right applies to original works, films and sound recordings. However, there is an exception with regard to artistic works; the right does not apply to artistic works of architecture in the form of a building and works of applied art.

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96 Ibid., para. 4.43.
2.4.1.1.3.4 The public performance right (section 19 CDPA 1988)
According to section 19(1) CDPA 1988 the performance of the work in public is an act restricted by copyright in a literary, dramatic or musical work. In the context of research data, this right is of minor importance.

2.4.1.1.3.5 The public communication right (section 20 CDPA 1988)
The communication to the public of the work is an act restricted by the copyright in literary, dramatic, musical and artistic works, sound recordings, films and broadcasts (section 20(1) CDPA 1988).
This exclusive right covers broadcasting and internet transmissions of works. With regard to the internet, for example, placing a work on a website or facilitating its downloading from a website will infringe copyright in the work.

2.4.1.1.3.6 The adaptation right (section 21 CDPA 1988)
The making of an adaptation of a literary, dramatic or musical work is a restricted act according to section 21 CDPA 1988. An adaptation is made when it is recorded in writing, or otherwise. The performance of any of the other restricted acts in relation to an adaptation is also a restricted act.
Making an adaptation does not simply mean the same as modifying a work. Section 21(3) CDPA 1988 defines an adaptation in relation to literary or dramatic works as a translation of a work; the conversion of a dramatic work into a non-dramatic work and vice versa; or a version of the work in which the story is conveyed by means of pictures in a form suitable for reproduction in a book, magazine or similar periodical. In relation to computer programs and databases, adaptation means an arrangement or altered version, or a translation.

2.4.1.1.4 Limitations
The definition of an infringement in relation to the six named restricted acts seems to be very simple. However, there are some principles and limitations to these potential acts of infringement.

2.4.1.1.4.1 Ideas
At first it is important to note that ideas are excluded from copyright protection under UK law. This principle means that copyright cannot subsist in the ideas that are expressed, but exclusively in the expression of the ideas. Lord Hoffmann said the following in Designers Guild v Russell Williams (Textiles) Ltd:

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97 Cf. ibid., para. 4.61.
99 Ibid., p. 171.
‘Plainly there can be no copyright in ideas ... either because they have no connection with the literary, dramatic, musical or artistic nature of the work or because they are not original, or so commonplace as not to form a substantial part of the work.’

2.4.1.4.2 Taking a whole or substantial part

Section 16(3) (a) CDPA 1988 states that an infringement may be constituted by the doing of an act of infringement in relation to the work as a whole or any substantial part of it. It follows that if what is done is in relation to an insubstantial part of a work there is no infringement. This principle is applicable to all of the restricted acts mentioned in the CDPA 1988. However, statute does not define what a substantial part of a work actually is. So it is up to the courts to decide whether a part is substantial or not.

In Ladbroke (Football) Ltd v William Hill (Football) Ltd it is said that: “Whether a part is substantial must be decided by its quality rather than its quantity. The reproduction of a part which by itself has no originality will not normally be a substantial part of the copyright and therefore will not be protected.”

However, to be a substantial part the section taken does not have to be a copyright work in its own right. Taking part of a compilation of unoriginal material may still be deemed to be a substantial part of the entire work, meaning that copying a small portion of a work can infringe copyright if that part is important in relation to the whole work. Hence, the correct approach is first to determine whether the work as a whole is “original” and protected by copyright, and then to inquire whether the part taken by the defendant is substantial. The following examples should help to clarify what a substantial part can be:

a) In Infopaq International A/S v Danske Dagblades Forening it was held that printing out an extract of 11 words of a copyright work could be “reproduction in part” if the elements reproduced were the expression of the intellectual creation of their author.

b) In Hawkes & Sons (London) Ltd v Paramount Film Service Ltd it was held that the use of a portion of only 20 seconds of a march which lasted some four minutes can infringe copyright in the march.

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101 MacQueen, Waelde, Laurie and Brown, note 82 above, para. 4.15.
103 MacQueen, Waelde, Laurie and Brown, note 82 above, para. 4.15; see also Ladbroke (Football) Ltd v William Hill (Football) Ltd, [1964] 1 WLR 273.
104 Bainbridge, note 90 above, p. 146.
107 Hawkes & Sons (London) Ltd v Paramount Film Service Ltd, [1934] Ch 593.
These cases demonstrate that even using a very small part of a work can be sufficient to commit an infringement.

2.4.1.4.3 Authorisation of infringement/permitted acts
According to section 16(2) CDPA 1988, the copyright in a work is only infringed by a person who does or authorises another to do any of the restricted acts without the licence of the copyright owner. That means that there cannot be an infringement if the copyright owner has authorised or consented to the act of infringement, e.g. by granting a licence to the responsible person.

Furthermore, the CDPA 1988 contains a number of acts permitted in relation to copyright works. These acts can be carried out without the owner’s permission. The rationale for the permitted acts, allowing what would otherwise be an infringement of copyright, can be seen as a way of limiting the strength of the rights associated with copyright. The justification for this restriction is that it provides a fair balance between the rights of the copyright owner and the rights of society at large.

The acts permitted in relation to copyright are complex and wide ranging in their scope and application, but at least some of the most important regulations will be described.

A temporary reproduction of a work that is transient or incidental is allowed when it is necessary to enable the lawful use and has no independent economic significance (section 28A CDPA 1988).

The Act also contains some fair dealing provisions. No fair dealing with an original work will constitute an infringement if it is carried out for one of the following purposes: research for a non-commercial purpose (section 29(1) CDPA 1988); private study (section 29(1) CDPA 1988); criticism or review (section 30(1) CDPA 1988); reporting current events (section 30(2) and (3) CDPA 1988). However, which kind of dealing with a work is fair or not is not defined, and it is again up to the courts to establish in each case whether a dealing is fair or not.

With respect to original works, copyright expires at the end of the period of 70 years from the end of the year in which the author dies (section 12(2) CDPA 1988). For other types of work, the period is 50 years or 25 years.

2.4.1.2 Protection as databases
Databases are a very important tool in the area of scientific research. It is useful to store, process and utilise data, such as raw research data in a database. In the UK, there are two different ways to protect databases. First, it is possible to gain copy-

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108 Bainbridge, note 90 above, p. 211.
109 Ibid.
110 For a detailed overview of the permitted acts see ibid., pp. 234 et seq., Table 7.2.
right protection over the database, and secondly, protection under the \textit{sui generis} database right is possible as well.

2.4.1.2.1 Copyright protection

A database which meets the requirements for copyright protection may be protected by copyright. The regulations for ownership and the restrictive acts are generally the same as for other work categories; a special definition is just used for the adaptation right. In relation to databases, adaptation means an arrangement or altered version of the database, or a translation of it\textsuperscript{111}.

2.4.1.2.1.1 Compilations and databases

According to section 3(1)(a) CDPA 1988, compilations are protectable as a literary work. Databases can always be seen as compilations\textsuperscript{112} and were thought to be protected under UK law as such\textsuperscript{113}. However, since the implementation of the Database Directive\textsuperscript{114}, databases are explicitly excluded from the term “compilation”; section 3(1)(a) CDPA 1988 states that a literary work is a table or compilation other than a database.

Databases are now protected as a separate type of literary work. Section 3A CDPA 1988 contains a specific definition of databases: Databases are “collections of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means”.

2.4.1.2.1.2 Originality

Databases have their own definition of originality in section 3A(2) CDPA 1988. A database “is original if, and only if, by reason of the selection or arrangement of the contents of the database the database constitutes the author’s own intellectual creation”. This is generally taken to be a higher level of originality than the traditional “skill, effort and labour” UK originality test\textsuperscript{115}, but it is rather unclear what this additional requirement of “intellectual creation” means\textsuperscript{116}.

The fact is that not everything that originates with the author will satisfy this originality test. The selection must involve a sufficient level of the author’s individual creativity. How much creativity is required is not made clear and will with-

\textsuperscript{111} See also above Chapter 2.4.1.3.6.


\textsuperscript{113} MacQueen, Waelde, Laurie and Brown, note 82 above, para. 2.56.

\textsuperscript{114} Directive 96/9/EC.

\textsuperscript{115} MacQueen, Waelde, Laurie and Brown, note 82 above, para. 2.57; cf. also Bainbridge, note 90 above, p. 280.

\textsuperscript{116} Unclear, e.g. MacQueen, Waelde, Laurie and Brown, ibid., para. 2.63; Bainbridge, ibid., pp. 280 et seq.
out doubt vary from case to case, but the requirement imposes a significant qualitative factor on the test, requiring some subjective contribution by the author\textsuperscript{117}.

In the case of a database of research data, the elements contained are usually pre-existing (results of an experiment etc.) and the individual who creates the database cannot choose which data he wants to fill the database, but has to use all data that is relevant in a specific context. The structure of the database has to be clear and based on the scientific needs. This does not leave much room for creativity and subjective contribution of the author. It follows that databases of research data are usually not protectable by copyright.

2.4.1.2.1.3 Limitations

The limitations on the restricted acts of the author or rightholder are almost the same as for other works and the fair dealing provisions apply to databases as they do to other literary works\textsuperscript{118}.

In addition, section 50D CDPA 1988 states that it is not an infringement of copyright for a person who has the right to use the database to do, in the exercise of that right, anything that is necessary for the purpose of access to and use of the contents of the database. This right cannot be excluded. Section 296B CDPA 1988 states that any term in an agreement shall be void in so far as it purports to prohibit or restrict the performance of any act permitted under section 50D CDPA 1988.

2.4.1.2.2 Sui generis right

The second way to protect a database under UK law is the *sui generis* database right. This right was introduced by the Database Directive too, but differs from copyright protection. The UK implemented the database right in the Database Regulations 1997\textsuperscript{119}. The purpose of copyright harmonised by the Directive is to provide encouragement for creative endeavour, and the *sui generis* right is designed to encourage investment in particular types of data gathering\textsuperscript{120}. The database right thereby protects databases, which although they may fail to meet the requirements for copyright protection as a database, are commercially valuable, being the result of a substantial investment\textsuperscript{121}. A copyright database is not precluded from also enjoying database rights\textsuperscript{122}.

\textsuperscript{117} Cf. clearer, *Copinger and Shone James on Copyright*, note 93 above, vol. I, 3-148.
\textsuperscript{118} Bainbridge, note 90 above, p. 282.
\textsuperscript{119} Copyright and Rights in Databases Regulations 1997 (SI 1997/3032).
\textsuperscript{120} *Copinger and Shone James on Copyright*, note 93 above, vol. I, 3-148.
\textsuperscript{121} Bainbridge, note 90 above, p. 282.
\textsuperscript{122} MacQueen, Waechle, Laurie and Brown, note 82 above, para. 6.5.
2.4.1.2.2.1 Requirements for protection

According to regulation 12(1) Database Regulations 1997, the term database has the same meaning as in section 3A(1) CDPA 1988. Thus a database means a collection of independent works, data or other materials, which are arranged in a systematic or methodical way, and are individually accessible by electronic or other means. Since regulation 12(1) Database Regulations 1997 does not contain a reference to section 3A(2) CDPA 1988, it is clear that an intellectual creation is not required for the database right to arise.

Regulation 13 Database Regulations 1997 states that the “database right” (as a property right) subsists in a database if there has been a substantial investment in obtaining, verifying or presenting the contents of the database.

The ECJ held that resources used during the stage of creation of data or other materials that are subsequently collected in a database cannot be taken into account in order to assess whether there was substantial investment. Therefore, a substantial investment in the creation of the database itself is required and not merely in the creation of the data.

The investment necessary for the existence of the database right may consist in the deployment of human, financial or technical resources but it must be substantial in quantitative or qualitative terms. The quantitative assessment refers to quantifiable resources and the qualitative assessment to efforts that cannot be quantified, such as intellectual effort or energy. Even if this definition is not completely clear, it can be assumed that the investment does not have to be above average.

Thus, the protection requirements are much lower than for copyright protection. Most databases that match the technical criteria (systematically or methodically arranged/individually accessible elements) do require a minimum of investment and are protectable by the sui generis right.

These criteria are also usually met in the field of research databases. In the majority of cases, quantitative resources such as working time and financial expenses will be used (for example in the course of a scientific research project) to create the database as well as intellectual effort and energy of the person creating the database. Consequently, research databases are in general protected by the database right.

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123 ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organization Ltd (BHB), [2004] ECR I-10415, para. 34.
124 ECJ Case C-338/02, Fixtures Marketing Ltd v Svenska Spel AB, [2005] ECDR 4, 43, para. 28.
125 And this even if the main investment in the course of scientific research concerns the creation of data, as long as there is also a substantial investment in the creation of the database. Different, but not convincing: The study of Knowledge Exchange, Annex 4 - The legal status of research data in the United Kingdom, available at: http://www.knowledge-exchange.info/Default.aspx?ID=461 (last accessed 06/2013), p. 21.
2.4.1.2.2 Right owner

According to regulation 15 Database Regulations 1997 the maker of a database is the first owner of a database right in it.

Regulation 14 Database Regulations 1997 defines the maker of a database as the person who takes the initiative in obtaining, verifying or presenting the contents and assuming the risk of investing in those activities. Thus, the maker of a database is not the natural person who creates it, but the person or entity which carries the financial risk to invest into the creation of the database.

Where a database is made by an employee in the course of his employment, his employer shall be regarded as the maker of the database (regulation 14(2) Database Regulations 1997).

2.4.1.2.2.3 Scope of protection

The *sui generis* database right has its own infringement regime distinct from that of copyright\(^{126}\). According to regulation 16 Database Regulations 1997, a person infringes the database right in a database if, without the consent of the owner of the right, he extracts or re-utilises all or a substantial part of the contents of the database. Extraction means the permanent or temporary transfer of those contents to another medium by any means or in any form, and re-utilisation means making those contents available to the public by any means\(^{127}\).

Basically, only the use of a substantial part infringes the database right. According to regulation 12(1) Database Regulations 1977 substantial means substantial in terms of quantity or quality or a combination of both.

The protection of the *sui generis* right through the exclusive rights of extraction and re-utilisation does not cover consultation of a database\(^{128}\); if the maker himself makes the contents of his database or a part of it accessible to the public, his *sui generis* right does not allow him to prevent third parties from consulting that base\(^{129}\). This means that as far as an extraction or re-utilisation is necessary to consult a database, this action is not covered by the database right, since according to the ECJ, the part of a database that has to be used to access a database does not form a substantial part of the database content.

Accepting that repeatedly taking insubstantial parts can compromise the owner’s economic rights in a database, regulation 16(2) Database Regulations 1977 provides that the repeated systematic extraction or re-utilisation of insubstantial

\(^{126}\) MacQueen, Wacke, Laurie and Brown, note 82 above, para. 6.12.


\(^{128}\) ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organisation Ltd, [2005] ECDR 1, 1, para. 54.

\(^{129}\) Ibid., para. 55.
parts of the contents of a database may amount to the extraction or re-utilisation of a substantial part of those contents.\textsuperscript{130}

2.4.1.2.2.4 Limitations
The limitations on copyright are not applicable to the database right. However, there are some separate exceptions to the database right mentioned in the Database Regulations 1997. The principal exceptions are for non-commercial research and teaching.

According to regulation 20 Database Regulations 1997 the database right in a database that has been made available to the public is not infringed by fair dealing with a substantial part of its contents for non-commercial research purposes; or if it is extracted for the purpose of illustration for teaching or research and not for any commercial purpose. It is important to note that these exceptions only allow extraction and not re-utilisation of substantial parts of a database.

Regulation 19 Database Regulations 1997 contains the provision that a lawful user\textsuperscript{131} of a database that has been made available to the public shall be entitled to extract or re-utilise insubstantial parts of the contents of the database for any purpose and that any contractual term that purports to prevent a person from extracting or re-utilising insubstantial parts will be void. The idea behind this regulation is that a person who has a contractual agreement with the rightholder shall not have fewer rights than any other lawful user.

Regulation 17 Database Regulations 1997 states that the right in a database expires at the end of the period of 15 years from the end of the year in which the making of the database was completed or in which the database was first made public.

However, any substantial change to the contents of the database which would result in the database being considered to be a substantial new investment shall qualify the database resulting from that investment for its own term of protection (regulation 17(3) Database Regulations 1997). A dynamic database could therefore end up with a rolling series of 15-year protections, which will keep the right alive so long as the owner thinks it worthwhile to continue investment in it.\textsuperscript{132}

2.4.2 Germany

2.4.2.1 Protection as a copyright work
One possible form of protection of research data is copyright protection. However, it is questionable whether all forms of research data can be protected

\textsuperscript{130} Bainbridge, note 90 above, p. 285.

\textsuperscript{131} A lawful user is defined in regulation 12(1) Database Regulations 1997 as a person who (whether under a licence or otherwise) has a right to use the database.

\textsuperscript{132} MacQueen, Waelde, Laurie and Brown, note 82 above, para. 6.11.
by copyright. To be capable of copyright protection, the respective research data has to constitute a copyright work.

2.4.2.1.1 The copyright work
The German Copyright law (Urheberrechtsgesetz/UrhG) provides detailed conditions for the copyright protection of works.

2.4.2.1.1.1 Kinds of work
Article 2 I UrhG names the different kinds of copyright protectable works. These are: literary works, musical works, works in mime, works of graphic art, works of photography, film works and scientific and technical maps.

Even though this list is non-exhaustive\textsuperscript{133}, it nevertheless provides an idea of what kinds of human creations copyright can protect; for example a written book or the sound of a song, a painted picture. All these works are artistic-creative creations.

2.4.2.1.1.2 Work of authorship
Since the list in Article 2 I UrhG is non-exhaustive the real prerequisite for a copyright-protectable work is mentioned in Article 2 II UrhG. According to this, a work is protectable by copyright if it is an original personal creation. The requirements are: a personal creation, intellectual content, a certain form and individuality.

A personal creation means that the work has to be made by a person. Therefore, a picture painted by a monkey or a text written by a translating computer are not works in the sense of copyright.

In addition to that, the work must have a certain form. This does not mean that the work has to have a tangible form, but that it has to be noticeable to persons other than the author himself. A poem that exists only in the head of the poet is not protectable. It has at least to be vocalised so that other people can hear it\textsuperscript{134}. Mere ideas are also not protectable\textsuperscript{135}, but only the concrete form, in which an idea is expressed. A TV-show format for example is not copyright protectable, since the show format is merely an idea and not a visual form of a work\textsuperscript{136}.

Intellectual content means that the work must be made to communicate in the widest sense. An intellectual creation occurs when the work has a thought- or emotional content which makes some kind of impression on the observer\textsuperscript{137}.

\textsuperscript{133} Cf. A. Nordemann, in Fromm/Nordemann (eds), Urheberrecht, 10th edition, Stuttgart, Kohlhammer, 2008, § 2, para. 11.
\textsuperscript{134} Example taken from ibid., para. 23.
\textsuperscript{136} Cf. BGH, GRUR 2003, 876 – Sendeformat.
\textsuperscript{137} Cf. Schulze, note 135 above, § 2, para. 12.
The last requirement for a protectable work, individuality, is the core principle of German copyright law. To examine individuality, two stages of examination are important: Does the work, when compared to work already known, show individual characteristics? and: Does the work satisfy a certain level of originality and is it not the result of a routine work?

It is notable that the requirements for individuality are not too high. Even the “small coin” (kleine Münze) is protectable by copyright. However, at least a minimum of originality is required. This is particularly relevant for works of applied arts. It is, for example, not sufficient just to copy something that can be found in the environment as a work of pure artistic craftsmanship, without giving the work an individual character\textsuperscript{138}.

Since research data can be every kind of data produced in the sphere of scientific research\textsuperscript{139}, no general statement can be given about the copyright protection of this data. In all cases it depends on whether the work in question is an original personal creation or not. Copyright protection is especially relevant for the creation of scientific papers.

2.4.2.1.2 Authorship and ownership

According to Article 7 UrhG the author is the creator of the work. Since a personal creation is required\textsuperscript{140}, the author of a work can only be a natural person\textsuperscript{141}. All of the exclusive economic and moral rights refer to the author as the rightholder.

In German copyright law, it is impossible to transfer the copyright to another person; article 29 I UrhG states that the copyright is unassignable. This means that the owner of the copyright is in every case the author.

However, as Article 31 I UrhG states, it is possible to assign “rights of use” to others. This granting of usage rights to others is often described as licensing, but it should be noted that there is no legal definition of the term “licence” in Germany. Therefore it is more precise to use the term “right of use”.

The UrhG also contains some provisions regarding employee-authors. In general, the employee as a natural person is the author of a work which was created as part of his job\textsuperscript{142}. Therefore, according to Article 43 UrhG, the employee remains the rightholder of all usage rights, unless the employment contract provides otherwise.

However, the regulation of Article 43 UrhG is not as clear as it seems to be. In the first instance it seems that the author retains all of his rights. But the reality is that the employment relationship is almost always based on the granting of rights.

\textsuperscript{138} BGH, GRUR 1995, 581, 582 – Silberdistel.
\textsuperscript{139} See above, Chapter 1.
\textsuperscript{140} Cf. above Chapter 2.4.2.1.1.2.
\textsuperscript{141} Cf. Schulze, note 135 above, § 7, para. 2.
\textsuperscript{142} Cf. ibid., § 7, para. 8 and § 43, para. 1.
of use to the employer\textsuperscript{143}. Thus, Article 43 UrhG means the opposite of what it seems to say\textsuperscript{144}: generally, the employee grants rights of use to the employer automatically as far as needed for the exploitation of the work.

Article 69b I UrhG contains a specific rule for computer programs. This regulation is much clearer than Article 43 UrhG. If a computer program is created in the context of an employment relationship, the employer is entitled to exercise all of the economic rights, unless otherwise contractually agreed, which means that the employer usually has the relevant rights of use.

The regulations in Articles 43 and 69b UrhG are also applicable in public sector employment relationships. Article 43 and Article 69b II UrhG mention the term “Dienstverhältniss(e)”, i.e. public sector employment relationships and not private law employment contracts\textsuperscript{145}, such as freelance agreements. Therefore it is crucial to make contractual arrangements regarding the granting of rights of use in such freelance agreements, since the employer does not get any rights automatically.

It should be noted that the author as the creator of the work is and remains in any case the owner of the copyright under German law. In an employment context, the employer is usually the owner of the rights of use as far as he needs them for the exploitation of the work. In the case of freelance agreements, it depends on the contractual regulations which rights are granted to the employer.

Provided that several authors have contributed to a copyright work, they are all co-authors of the work (Article 8 I UrhG).

2.4.2.1.3 Exclusive rights

The exclusive rights of the author are mentioned in Articles 15 et seq. The author has the exclusive right of reproduction (Articles 15 I no. 1, 16 UrhG), right of distribution (Articles 15 I no. 2, 17 UrhG), right of exhibition (Articles 15 I no. 3, 18 UrhG), and the right of communication to the public (Article 15 II UrhG). The consent of the author or rightholder is required to exercise one or more of these actions.

2.4.2.1.3.1 Right of reproduction (Articles 15 I no. 1, 16, 69c no. 1 UrhG)

The right of reproduction gives the author or rightholder the exclusive right to reproduce a copyright work. The BGH defines a reproduction as any physical fixing of a work which is suitable to make the work directly or indirectly perceptible by the human senses\textsuperscript{146}.

\textsuperscript{143} E.g. in the case of journalists, directors, translators, illustrators etc.

\textsuperscript{144} Likewise Nordemann, note 133 above, § 43, para. 1.

\textsuperscript{145} Cf. A.-A. Wandtke, in Wandtke/Bullinger (eds), Urheberrecht, 3rd edition, Munich, 2009, § 43, para. 14; and M. Grützmacher, in ibid., § 69b, para. 3.

\textsuperscript{146} Cf. BGH, GRUR 2001, 51, 52 – Parfumflakon.
Reproduction is defined as a physical exploitation right. All reproductions that lead to a new physical fixation of a work are covered, regardless of the form used; for example, the copying of a book, the recording of a film or the storing of a computer program. The reproduction even covers the copying of only parts of a work, if copyright subsists in the copied parts themselves. Thus every permanent or temporary, whole or partial, reproduction by any means, regardless of whether in digital or analogue form, falls within the scope of the term reproduction.

2.4.2.1.3.2 Right of distribution (Articles 15 I no. 2, 17, 69c no. 3 UrhG)

Another physical exploitation right is the right of distribution. This is the right to publicly offer or put into circulation the copyright-protected work or copies thereof. The offer or putting into circulation must aim at granting possession over the copy of work. The classical acts of distribution are the offering for sale and the selling of goods. But rental and lending are also acts of distribution. According to the prevailing opinion, the copy of work which is or shall be distributed must exist in a physical form. However, this changes at the moment, at least in relation to computer programs.

An important limitation to this right is the “exhaustion of the distribution right”. This principle is contained in Article 17 II UrhG and provides that if the original or copies of a work were put into circulation by sale and with the permission of the holder of the distribution right, the further distribution of these copies is permitted. The background to this principle is that the free movements of goods shall not be hindered once they are lawfully distributed and the author has had the chance to be fairly remunerated for this.

2.4.2.1.3.3 Right of exhibition (Articles 15 I no. 3, 18 UrhG)

The right of exhibition is the right to exhibit originals or copies of an unpublished work of graphic art or photography to the public. In the context of research data, this right is of minor importance.

2.4.2.1.3.4 Right of communication to the public (Articles 15 II, 69c no. 4 UrhG)

The right of communication to the public is the right to use and exploit a copyright work in non-physical forms. In particular, it includes the right of recital, performance and presentation (Articles 15 II s. 2 no. 1, 19 UrhG), the right to make publicly available (Articles 15 II s. 2 no. 2, 19a UrhG), the broadcasting right...
(Articles 15 II s. 2 no. 3, 20 UrhG), the right to render through a picture or sound carrier (Articles 15 II s. 2 no. 4, 21 UrhG) and the right of communication of broadcasts and to make publicly available (Articles 15 II s. 2 no. 5, 22 UrhG).

The most important right in the context of research data is the right to make the work publicly available. Article 19a UrhG gives the author the exclusive right to make the work available to the public by wire or wireless means in such a way that it is available to public users in places and at times of their own choosing.

The right is neutrally formulated with respect to technology; however, it is closely related to the internet\textsuperscript{151}; it was included in the UrhG in 2003 with the objective of closing gaps in connection with the online exploitation of intellectual works\textsuperscript{152}.

In this context, “publicly available” is understood as intended to be accessible to more than one member of the public. The term public covers everyone who is not connected by personal relationship with the person exploiting the work or with other people to whom the work is made accessible (Article 15 III UrhG).

The most relevant form of making publicly available is the publishing of data in information networks (for example, but not only, the internet). The consent of the author or rightholder is always required when the work is to be used in information networks.

2.4.2.1.3.5 Right of adaptation (Articles 23, 69c no. 2 UrhG)

A copyright work can be adapted without the consent of the author. However, according to Article 23 s. 1 UrhG the exploitation of a modified or adapted work is not allowed without the consent of the author.

2.4.2.1.4 Limitations

The exclusive rights of the author or rightholder are subject to some limitations.

At first it should be noted that copyright just protects the respective manifestation of a work and not the ideas behind it; bare data and facts are not protected by copyright\textsuperscript{153}. Therefore, it is possible to copy bare facts of a work and express them in one’s own words. Furthermore, there is no copyright infringement if there is no copyright existing in the used part of a work.

An important limitation in the scientific context is the right of quotation which is provided through Article 51 UrhG. The use of another author’s work is permitted when it is used for the purpose of quotation to the extent necessary for this purpose in another copyright protectable work.

Another relevant limitation is the right of copying a work for personal use or one’s own scientific purposes (Article 53 UrhG). A use may be regarded as private

\textsuperscript{151} Cf. W. Bullinger, in Wandtke/Bullinger (eds), note 145 above, § 19a, para. 2.

\textsuperscript{152} Cf. A. Dustmann, in Fromm/Nordemann (eds), note 133 above, § 19a, para. 1.

\textsuperscript{153} Cf. Schulze, note 135 above, § 2, para. 130.
if it belongs to the domestic sphere or circle of family and friends, and scientific in the context of a scientific activity. In both cases it is only permitted to make single copies of a work.

The copyright expires 70 years after the death of the author (Article 64 UrhG).

2.4.2.2 Protection as databases

A special, and maybe the most important kind of research data, are databases. Research databases can contain almost every kind of data, journal articles or abstracts, metadata, raw research data etc. Databases may be copyright protectable, but also protectable by another right, the sui generis database right.

2.4.2.2.1 Copyright protection of collections/databases

The UrhG contains a special provision in Article 4 on the copyright protection of collections and databases. This regulation is just a clarification and definition of these categories of work. The protection of such works has already been possible for the open catalogue of works of Article 2 I UrhG. Therefore, the requirements for copyright protection, ownership and the exclusive rights of such works are the same as for other work categories.

2.4.2.2.1.1 Collections and databases

According to Article 4 I UrhG, a collection of data can be protected by copyright if it consists of works, data or other independent elements which, by reason of the selection or arrangement of the elements, represent a personal intellectual creation. A sub-case of a collection is a database work. A database work is a collection whose elements are arranged systematically or methodically and individually accessible by electronic or other means (Article 4 II UrhG).

2.4.2.2.1.2 Original personal creation

For the copyright protection of a collection it is irrelevant whether or not the individual elements contained in the collection can be protected as copyright works as well. What is relevant is whether the collection itself constitutes a personal intellectual creation. This means that even if the research data contained in a database are not capable of being protected by copyright, it is still possible that the database itself is protectable.

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154 Cf. W. Nordemann, in Fromm/Nordemann (eds), note 133 above, § 53, para. 6.
155 “Scientific” means an activity that is taught at universities; cf. ibid., § 53, para. 19; with a broader definition: Schulze, note 135 above, § 53, para. 23.
156 This means no more than seven copies, cf. BGH, GRUR 1978, 474 – Vervielfältigungsstücke.
158 See above Chapter 2.4.2.1.
159 Cf. Schulze, note 135 above, § 4, para. 4.
However, the protection requires a personal intellectual creation. Therefore, the selection or arrangement of the database elements must constitute an intellectual creation and the work must have reached a certain level of originality. The meaning of the content must go beyond the mere sum of the data elements contained. For protection as a database work it is necessary that the collection has an individual character in its structure, which is created by the selection or arrangement of its content.

In the case of research data, collections and databases will usually not be protectable by copyright. The elements contained are usually pre-existing (results of an experiment etc.). The aim of a database in such a context is a clear and flexible presentation of the data. Therefore the individual cannot choose which data he wants to fill the database, but has to use all data that is relevant in a specific context. The structure of the database has to be clear and based on the scientific requirements. This does not leave much room for creativity or individual choices of the creator of a database for research data. It follows that collections and databases of research data are usually not protectable by copyright.

2.4.2.2.1.3 Limitations

In general, copyright does not protect mere ideas. This is also the case for copyright protection of databases; the idea behind the database is not protectable, but only the concrete form of the database work.

The limitations on the exclusive rights of the author/rightholder are almost the same as for other works. However, there is one important exception in Article 53 V UrhG, which states that the right of copying a work for personal use is not applicable for electronic databases. But according to Article 55a UrhG the authorised user is allowed to make copies of a database work if these are necessary for the normal use of the database.

Furthermore, Article 23 s. 2 UrhG states that not only the exploitation of an adaptation of a database work is illegal without the consent of the author, but also the creation of an adaptation itself.

2.4.2.2.2 Sui generis right

Databases can enjoy not only copyright protection, but also protection under the sui generis right for databases. The database right is based on Directive 96/9/EG, which implemented this right in the EU. The database right is contained in Article

160 See above Chapter 2.4.2.1.1.2.
161 BGH, MMR 2007, 589 – Gedichttellelle I.
2.4.2.2.1 Requirements for protection
The requirements for protection as a database are listed in Article 87a I s. 1 UrhG. According to that provision, the database has to be systematically or methodically arranged, the elements of the database have to be individually accessible and the database has to have required a substantial investment. The first two requirements are merely of a technical character; the most important requirement is the substantial investment.

It is important that a substantial investment in the creation of the database itself is necessary. It is not sufficient to invest only in the creation of the data. To obtain database protection, the investment in the creation of the database does not have to be above average. Only totally insignificant expenditure that can be made by anyone is insufficient. Thus, even personnel expenses for review and assessment of the data may be sufficient. Protection requirements are low. Most databases that match the technical criteria (systematically or methodically arranged/individually accessible elements) do require a minimum of investment and are protectable by the sui generis right. Also in the field of research databases, these criteria are usually met. Consequently, research databases are mostly protected by the database right.

2.4.2.2.2 Right owner
The owner of the database right is the database maker (“Datenbankhersteller”); this is the person who has made the substantial investment in the creation of the database (Article 87a II UrhG). Unlike copyright, the owner of the database right does not have to be a natural person, but can be a legal person as well.

The right owner is not the person who collects, examines and systematically arranges the data, but instead the person or entity which has made the investment in the database creation, or in other words the risk carrier of the economic decision to invest in the creation of the database. This means that in an employment relationship the employer is usually the owner of the database right.

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164 Cf. T. Dreier, in Dreier/Schulze (eds), note 135 above, §§ 87a et seq., para. 8.
165 Cf. D. Thum, in Wandtke/Bullinger (eds), note 145 above, § 87a, para. 36; ECJ Case C-338/02, Vernissages Marketing Ltd v Svenska AB (Svenska), [2004] ECR I-10497, para. 24; BGH, GRUR 2005, 857, 858 – HIT BILANZ.
166 Cf. BGH, MMR 2011, 676, para. 23 – Zweite Zahnarztmeinung II.
167 Cf. BGH, MMR 2011, 676, para. 21 – Zweite Zahnarztmeinung II.
168 Cf. Leistner, note 163 above, p. 304.
169 Cf. Thum, in Wandtke/Bullinger (eds), note 145 above, § 87a, para. 134.
170 Cf. Westkamp, note 112 above, pp. 406 et seq.
2.4.2.2.2.3 Scope of protection

It should be noted that the database right does not protect the data itself, but the investment in the creation of the database. However, this investment is protected by giving the right owner the exclusive right to exploit the database.

Basically, the exclusive rights of the right owner correspond to the common exploitation rights of a copyright owner. The exclusive rights are named in Article 87b UrhG. The producer has the right to copy, distribute or make available to the public the entire database or any substantial part of it (Article 87b I s. 2 UrhG).

Just the extraction/use of a substantial part is not allowed without the permission of the rightholder. To commit an infringement, a qualitatively or quantitatively substantial part of the database has to be extracted. Whether a part is substantial or not is decided on a case-by-case basis. In quantitative terms, the BGH has held the extraction of 75% of the data to be a substantial part and the extraction of 10% not to be substantial. However, according to the ECJ even a quantitatively insubstantial part can be of a substantial nature if this part is of importance for the investment in the database creation. And in the Autobahnmaut decision, the BGH held that even the making available of the datasets of single users to those users is a relevant act if this is the main utilisation of the database, and the users altogether belong to the public sphere.

In general, the exclusive rights of the right owner are not affected by the use of insubstantial parts of the database. Thus querying a database is allowed. This was also held by the ECJ in its BHB decision in which it held that the protection of the sui generis right through the exclusive rights of extraction and re-utilisation does not cover consultation of a database.

Since the use of insubstantial parts of a database is generally possible without the consent of the database producer, it would be possible to extract systematically many insubstantial parts and rearrange them in order to get a substantial part as the final result. To prevent this circumvention, Article 87b I s. 2 UrhG contains the provision that the exclusive rights also apply if non-substantial parts of the database are repeatedly and systematically copied, distributed or made available to the public in a way that is contrary to a normal utilisation of the database.

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171 Cf. Leistner, note 163 above, p. 308.
172 Cf. BGH, MMR 2010, 41 – Gedichttielliste III.
173 Cf. BGH, MMR 2011, 676 – Zweite Zahnarztmeinung II.
175 Cf. BGH, MMR 2011, 188 – Autobahnmaut.
176 ECJ Case C-203/02, British Horseracing Board Ltd v William Hill Organization Ltd (BHB), [2004] ECR I-10415, para. 54.
2.4.2.2.4 Limitations

The limitations on copyright are not applicable to the sui generis right. Article 87c UrhG contains a definitive list of limitations on the database right. According to this provision, the copying of a substantial part of a database is allowed for one’s own private or scientific use and the purpose of illustration for teaching. Furthermore, copying, distribution or communication to the public is permitted, in a lawsuit or a proceeding involving authorities and for public security uses. Since the regulation of Article 87c UrhG is not entirely clear on this issue, it is important to note that the limiting provisions of database protection only apply to databases that have been published.

Article 87e UrhG contains a provision that the rightholder cannot contractually exclude the lawful user from the reproduction, distribution or communication to the public of insubstantial parts of the database. The background for this is that even someone who has no contractual agreement with the rightholder has the right to do these acts in relation to the database.

According to Article 87d s. 1 UrhG, the exclusive rights of the database producer expire 15 years after the publication of the database; and if the database was not published, 15 years after the creation of the database. However, it is important to be aware that a significantly modified database is regarded as a new database if the modifications require a substantial investment (Article 87a I s. 2 UrhG). The reason for this is that a new substantial investment shall be protected too. On the other hand, this means that the protection begins again. Thus the database right does not always expire after 15 years, but can be extended with every new substantial investment – possibly endlessly.

2.4.3 The Netherlands

2.4.3.1 Protection under the Copyright Act

2.4.3.1.1 The work

Whereas scientific publications virtually always attract copyright protection under the copyright laws of the Member States of the European Union, the individual research data and the datasets containing them may not so easily fall under the copyright regime. Since copyright does not protect mere facts and ideas, but rather attaches to the original expression of ideas, research data is not likely to qualify as protectable subject matter for lack of originality. Article 10 of the Dutch Copyright Act (DCA) contains a non-exhaustive list of categories of works that are literary, scientific and artistic works, and are protected under the DCA provid-

177 Cf. ibid., para. 62.
178 Cf. Leistner, note 163 above, p. 313; Thum, in Wandtke/Bullinger (eds), note 145 above, § 87c, para. 7.
ed they are sufficiently original. This includes original adaptations (Article 13 DCA). The criterion of originality is not specified in the Act but has been recognised as a requirement for protection by the courts in several cases. \textsuperscript{179} “Originality” (or “oorspronkelijkheid”) is in Dutch practice typically used as shorthand for a two-pronged test elaborated by the Supreme Court. The work must have an “own, individual character” and “bear the personal stamp of the author.” \textsuperscript{180}

Dutch copyright law contains special provisions for two categories of works: \textit{geschriften} (written works) and posthumous works, of which only the \textit{geschriften} are of interest here. The special regime for written works is not laid down as such in the Copyright Act, but is derived from the case law of the Supreme Court, which interpreted the expression “other writings” as including texts devoid of original character. Not all non-original writings fall under this regime: to be protected, a non-original writing must be published or be destined to be published. The protection conferred is more limited in scope than under the normal copyright regime; however, it is more akin to an unfair competition regime, for a claim for infringement of the regime on written works is admissible only against direct and (almost) complete copying. To limit the bounds of this regime, the Copyright Act specifies that computer programs and \textit{sui generis} databases are not “writings” within the meaning of Article 10(1)(1) of the Copyright Act. Therefore, non-original software does not fall under this protection regime. By contrast, non-original databases have been recognised as impersonal writings, but only if they do not qualify for \textit{sui generis} protection due to a lack of substantial investment in the obtaining, verification or presentation of the contents.

Following the \textit{Football Dataco} decision of the ECJ,\textsuperscript{181} however, it became clear that the \textit{geschriftenbescherming} no longer fitted within the European framework. Consequently, the Dutch government recently introduced a bill to repeal the \textit{geschriftenbescherming} from the Copyright Act. If adopted, this abrogating Act will bring the Dutch database protection in line with the European standard, e.g. copyright protection for original databases and \textit{sui generis} protection for databases showing a substantial investment in the collection, verification or presentation of the content of the database.

### 2.4.3.1.2 Exclusive rights

Under the DCA, all exclusive rights of the author are governed by either one of two broad concepts: the right to make a reproduction, or “verveelvoudiging”, pursuant to Article 13 DCA and the right to communicate to the public, or “openbaarmaking”, pursuant to Article 12 DCA.

The right to make a reproduction encompasses two elements: the right to make copies of a work of authorship, and the right to make adaptations, arrangements, interpretations, translations, or any form of conversion of the work into another work. Actually Article 13 of the Act only refers to the second element of the right of reproduction. Because the issue was so obvious to the Dutch legislator, the first element of the right of reproduction is nowhere explicitly provided for in the Act. However, Article 14 of the DCA specifies for more certainty that “the reproduction of a literary, scientific or artistic work includes the fixation of the whole or part of the work on an object, which is intended to play a work or to show it”.

The right to communicate to the public generally covers all acts by which a work can be communicated, distributed or made available to the public, including the first disclosure of the work or of adaptations of the work, the distribution of copies of the work, and the acts of playing, displaying, reciting the work etc.

According to the Dutch legislator, the concept of reproduction already included the right of reproduction described in Article 2 of the Info Directive, while the concept of communication to the public was broad enough to encompass both the right of communication to the public of Article 3 and the distribution right of Article 4 of the Directive. The implementation of the Info Directive has therefore not resulted in any modification of the provisions relating to the author’s exploitation rights in the DCA.

Since the reproduction right under Article 13 of the Act focuses on the making of copies, it has generally been recognised in case law and literature that offering links, even deep links, to websites is not an act of reproduction\[^{182}\]. However, it is generally considered unlawful under the general law of torts to provide links if one actually knows or should have reason to know that the links lead to illicit content.

### 2.4.3.1.3 Exceptions and limitations

Chapter 6 of the DCA contains numerous limitations exceptions allowing unauthorised use of protected works for different purposes, by different types of users and under different conditions. The most relevant in the context of this study are

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\[^{182}\] District Court of The Hague, 20 December 2006, *(Kunstenares v CU2)*, IEPT 2006-12-20; Court of Appeal of Den Bosch, 12 January 2010, *(C.More v MyP2P)*, IEPT 2010-01-12; District Court of Amsterdam, 12 September 2012, *(Sanoma v GeenStijl)* IEPT 2012-09-12.
the right of quotation (Article 15a), the right to use works communicated by or on behalf of a public authority (Article 15b), and the educational use exception (Article 16).

Before the implementation of the Info Directive, Article 15a of the Copyright Act 1912 stated that quotations were allowed in “an announcement, criticism, polemic or scientific treatise” as long as the conditions set out in the Article were met. For many authors, the circumstances listed in the Act are the most controversial element of the provision. Such restriction on the scope of the limitation appeared strange not only in light of the neutral concept of “quotation”, but also in light of social reality. The quotation right of Article 15a has therefore been updated. A quotation is now permissible not only in “an announcement, criticism or scientific treatise”, but also in a “publication for a comparable purpose”. The scope of the quotation exception is restricted under Article 5(3)(d) of the Info Directive in the following ways:

a) the work quoted from must have been published lawfully;

b) the quotation is to be commensurate with what might reasonably be accepted in accordance with social custom and the number and size of the quoted passages are justified by the purpose to be achieved;

c) as far as reasonably possible the source, including the author’s name, is to be clearly indicated.

This was already stated as such in the DCA. The requirement that moral rights are to be observed, not prescribed by the Directive, was maintained as well. According to Article 15a(2) the term “quotations” shall also include quotations in the form of press summaries from articles appearing in a daily or weekly newspaper or other periodical.

Unique to the DCA and relevant in the context of scientific works produced or disseminated by or on behalf of public authorities is Article 15b, which reads as follows:

183 Article 15a of the DCA reads as follows:

"Quotations from a literary, scientific or artistic work in an announcement, criticism or scientific treatise or publication for a comparable purpose shall not be regarded as an infringement of copyright, provided that:

1o. the work quoted from has been published lawfully;

2o. the quotation is commensurate with what might reasonably be accepted in accordance with social custom and the number and size of the quoted passages are justified by the purpose to be achieved;

3o. the provisions of Article 25 are observed; and

4o. so far as reasonably possible the source, including the author’s name, is clearly indicated.

2. In this Article the term ‘quotations’ shall also include quotations in the form of press summaries from articles appearing in a daily or weekly newspaper or other periodical.

3. This Article shall also apply to quotations in a language other than the original.".
“The further communication to the public or reproduction of a literary, scientific or artistic work communicated to the public by or on behalf of the public authorities shall not be deemed an infringement of the copyright in such a work, unless the copyright has been explicitly reserved, either in a general manner by law, decree or ordinance, or in a specific case by a notice on the work itself or at the communication to the public. Even if no such reservation has been made, the author shall retain the exclusive right to have appear, in the form of a collection, his works which have been communicated to the public by or on behalf of the public authorities.”

This exception is barely invoked in practice and has led since its introduction in the Copyright Act in 1975 to only three judicial decisions184. In the Internetnotarissen case, the Court of Appeal of Arnhem ruled that a “public authority” pursuant to Article 15b of the Copyright Act is to be understood as a body entrusted with regulatory authority, e.g. one that has a statutory power to make binding rules185.

Another exception that is relevant to the use and dissemination of scientific works is the educational use exception. Long before the implementation of the Directive, the DCA allowed the “taking over of parts of works” for teaching purposes, pursuant to Article 16. Article 16 § 1a gave examples of possible acts falling under the scope of the exception, such as the taking over in publications and sound or visual recordings and according to § 1b radio or television programmes. Whether these means of reproduction included digital reproduction or online communication was highly uncertain. As a result of the implementation of the Directive, Article 16 of the DCA has been made technology-neutral/independent, so that digital reproductions also are covered as well as acts of making a work available to the public. Accordingly, all reproductions and communications that comply with the conditions set out in the article are in principle covered.

Notably, Article 16 of the DCA contains three additional criteria that do not appear in Article 5(3)(a) of the Directive:

a) the work from which the part is taken must have been published lawfully;

b) the adoption must be in accordance with what might reasonably be accepted under the rules of social custom;

c) moral rights have to be observed.

In addition, educational use requires that the source of the work used be indicated. Furthermore, and in contrast to the Directive, educational uses have always been


and remain permissible under Dutch law provided that an equitable remuneration is paid to the rights owners. It has been and still is up to the user (the institution) to make a timely offer of equitable compensation to the rightholder; equitability is estimated in terms of what is accepted in the line of business at hand.

Before the implementation of the Info Directive, all institutions that provided materials made for use as illustration for teaching purposes could benefit from the teaching exception. This included commercial institutions, for instance companies that published educational books. “Teaching” was to be interpreted broadly. To comply with the requirements of the Directive, Article 16 of the DCA has been modified to specify that the taking over from parts of work shall not be deemed an infringement of copyright only to the extent justified by the intended, non-commercial purposes. The meaning of non-commercial is not quite clear yet, but according to the Minister of Justice the nature of the activity of taking over the protected material is decisive. If this activity only takes place with the intention of using the material exclusively for teaching purposes, it will be covered by the exception of Article 16. Recital 42 of the Directive stresses that organisation and means of funding of the education institute is not decisive. Agreements between right owners themselves and between right owners and users of copyright-protected material will have to determine the line between commercial and noncommercial use according to the Minister.

2.4.3.2 Protection under the Database Act

The provisions on the sui generis database right in the EU Database Directive have been transposed in a separate piece of legislation, the Dutch Database Act. This Act contains nine articles that closely follow the wording of the Directive, but augmented by a series of definitions (Article 1), provisions prohibiting the circumvention of effective technological protection measures (Article 5a) and the removal of rights management information (Article 5b), and a special provision on the exercise of rights on databases produced by or on behalf of public authorities (Article 8).

2.4.3.2.1 Requirements for protection

Pursuant to Article 1a of the Database Act, and in conformity with the Database Directive, a database is protected if it constitutes “a collection of independent works, data or other materials arranged in a systematic or methodical way and which elements are individually accessible by electronic or other means and for which the acquisition, control or presentation of the contents, evaluated qualitatively or quantitatively, bears witness to a substantial investment”. Unconvinced of the need to grant protection for databases beyond what the Dutch copyright regime already provided for (original databases and geschriftenbescherming), Dutch courts have tended, since the very adoption of the Database Act, to interpret the requirement of “substantial investment” rather restrictively. Before the
ECJ rendered its decision in the British Horseracing Board case, the Dutch Supreme Court had elaborated the spin-off doctrine, according to which the production of a database did not show any substantial investment if it merely derived from an enterprise’s main activity, such as the making of a television programme listing by a broadcaster, or of a telephone book by a telecommunication service provider. Since the ECJ’s decision, Dutch courts have followed the ECJ’s creation/collection dichotomy and are in general reluctant to conclude that there has been a substantial investment in the absence of clear evidence put forward by the alleged rightholder that he incurred substantial costs in either collection, verification or presentation of the content of the database.

2.4.3.2.2 Rights owner

The beneficiary of the protection is not defined in the Dutch Database Act. There is therefore no reference in the Act to any kind of risk of investing. Dutch commentators seem to agree, however, that the sui generis right “should only be conferred as a reward for the risks taken by the innovating industry which actually produce the databases, not the commissioning parties.” Other commentators posit that employees, subcontractors or anyone else executing the work without bearing the financial responsibility for the end product cannot be considered as database rightholders.

The Database Directive is silent on the issue of the source of the funding or the role of public money in the acquisition of rights. The Netherlands is so far the only Member State to have explicitly regulated the exercise of the sui generis rights by public sector bodies. Article 8 of the Dutch Database Act denies a public authority the right to exercise its exclusive database rights unless the right is reserved explicitly by a general mention in an act, order or ordinance, or in a specific case by notification on the database itself or while the database is made available to the public.

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187 Case where substantial investment was found to exist: Court of Appeal of Arnhem, (Openbareverkopen v Internetnotarissen), IEPT 2008-06-24; cases where no substantial investment was found to exist: Court of Appeal of Arnhem, 4 July 2006, (NVM v Zweckdeheitigen), IEPT 2006-06-04; Court of Appeal of The Hague, (KNMP v IDI/Farma) IEPT 2008-07-10; Court of Appeal of Amsterdam, (PR Aviation v Ryanair), IEPT 2012-03-13.


The specific question of the impact of public funding on the nature of the investment made to produce a database was the object of a ruling from the Raad van State (Dutch Council of State) in the Landmark case. The case involved the interpretation of an article about the reuse of public sector information. A private company called Landmark, specialising in geographical information, had requested environmental information from the local authorities. Among the information was a list of addresses where soil research had taken place. The question in this case was whether the local authorities of Amsterdam were authorised to impose conditions and restrictions for the reuse of the list of addresses. Article 11a sub 1a of the Public Administration Act imposes two conditions on public bodies’ ability to rely on the reuse regulation. First of all, a database must be present and secondly the public sector body has to qualify as the producer of the database. The court noted that the definition of “the database” and “the producer of the database” should be interpreted in the same way as in the context of the Dutch Database Act.

At first instance, the District Court of Amsterdam ruled that the City Council did not qualify as a “producer of a database” and therefore did not own any database right in the information it gathered, since the collection of data occurred in the performance of its public task and with the support of governmental subsidies; the database was indeed realised thanks to public funds, partially coming from the Ministry of Housing, Spatial Planning and Environment. Referring to Recital 41 of the Database Directive, the Court considered that the City Council did not qualify as a producer of the database because it did not actually bear the risk of the investment since public funding and government subsidies could not be equated to an investment that needed to be recouped on the market. The Court stated that the database was made with the intention to simplify/facilitate the public task of the local authorities. Furthermore, the production of the database was initiated and financed by the local authorities of Amsterdam, a large part of which was financed by the Ministry of Housing, Spatial Planning and the Environment to fulfil the task of mapping local soil pollution. In these circumstances the Court found that the local authorities did not carry the risk of the substantial investment for the production of the database. Therefore, the Court came to the

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190 ABRvS 29 April 2009, n 07/786, AMI 2009-6 (College B&W Amsterdam/Landmark; with annotation from M. Van Eechoud).
191 The Court also made reference to the ECJ Case C-304/07, Directmedia Publishing GmbH v. Albert-Ludwigs-Universität Freiburg (Directmedia), [2008] MMR 2008, 807, in which the Court declared that the purpose of the database right is “to guarantee the person who has taken the initiative and assumed the risk of making a substantial investment in terms of human, technical and/or financial resources in the obtaining, verification or presentation of the contents of a database a return on his investment by protecting him against the unauthorised appropriation of the results of that investment by acts which involve in particular the reconstitution by a user or a competitor of that database or a substantial part of it at a fraction of the cost needed to design it independently”.

conclusion that the local authorities of Amsterdam could not be qualified as the producer of the database of which the list of addresses was part. This ruling was confirmed on 29 April 2009 by the Raad van State. The Dutch position is so far unique within the EU.

2.4.3.2.3 Exclusive rights

In conformity with the Database Directive, the producer of a database enjoys under Article 3 of the Dutch Database Act the exclusive right to authorise the following acts: (a) the extraction or re-utilisation of all or a substantial part of the content of the database, evaluated qualitatively or quantitatively; and (b) the repeated and systematic extraction or re-utilisation of insubstantial parts of the content of a database, evaluated qualitatively or quantitatively, where this conflicts with the normal exploitation of that database or unreasonably prejudices legitimate interests of the producer of the database. Dutch courts have been called upon on a number of occasions to rule in cases of alleged infringement of the sui generis database right, and to determine whether an act of extraction was substantial or not.

The most interesting dispute to have reached the courts so far concerns the question of whether a daily search of a database by a dedicated search engine amounts to an unlawful repeated and systematic act of extraction and re-utilisation of that database. The Court of Appeal of The Hague referred questions for preliminary ruling to the ECJ to determine the scope of protection offered by the Database Act in relation to acts of extraction and re-utilisation through a dedicated meta search engine. The Court of Appeal posed the following nine questions to the ECJ:

(1) Is Article 7(1) of the Directive to be interpreted as meaning that the whole or a qualitatively or quantitatively substantial part of the contents of a database offered on a website (on line) is re-utilised (made available) by a third party if that third party makes it possible for the public to search the whole contents of the database or a substantial part thereof in real time with the aid of a dedicated meta search engine provided by that third party, by means of a query entered by a user in ‘translated’ form into the search engine of the website on which the database is offered?

(2) If not, is the situation different if, after receiving the results of the query, the third party sends to or displays for each user a very small part of the contents of the database in the format of his own website?

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192 ABRs 29 April 2009, n 07/786, AMI 2009-6 (College B&W Amsterdam/Landmark; with annotation from M. van Eechoud).

193 Reference for a preliminary ruling from the Gerechtshof’s Gravenhage (Netherlands) lodged on 30 April 2012 – Innoveb B.V. v Wegener ICT Media B.V., Wegener Mediaventions B.V. (Case C-202/12).
(3) Is it relevant to the answers to Questions 1 and 2 that the third party undertakes those activities continuously and, with the aid of its search engine, carries out daily a total of 100 000 queries received from users in ‘translated’ form and makes available the results thereof to various users in a manner such as that described above?

(4) Is Article 7(5) of the Directive to be interpreted as meaning that the repeated and systematic re-utilisation of insubstantial parts of the contents of the database which conflicts with normal exploitation or unreasonably prejudices the legitimate interests of the maker of the database is not permissible, or is it sufficient for there to be repeated or systematic re-utilisation?

(5) If repeated and systematic re-utilisation is a requirement,

(a) What does ‘systematic’ mean?

(b) Is re-utilisation systematic when an automated system is used?

(c) Is it relevant that a dedicated meta search engine is used in the manner described above?

(6) Is Article 7(5) of the Directive to be interpreted as meaning that the prohibition for which it provides does not apply if a third party repeatedly makes available to individual users of a meta search engine belonging to that third party only insubstantial parts of the contents of the database in response to each query?

(7) If so, does that also apply if the cumulative effect of the repeated re-utilisation of those insubstantial parts is that a substantial part of the contents of the database is made available to the individual users together?

(8) Is Article 7(5) of the Directive to be interpreted as meaning that, if conduct which has not been approved and which is such that, as a result of the cumulative effect of re-utilisation, the whole or a substantial part of the contents of a protected database is made available to the public, the requirements of that provision are satisfied, or must it also be claimed and proved that those acts conflict with the normal exploitation of the database or unreasonably prejudice the legitimate interests of the maker of the database?

(9) Is it assumed that the investment of the maker of the database is seriously prejudiced in the event of the aforementioned conduct?

At the time of writing this study, the case is still pending before the ECJ. It will be interesting to see how the Court will respond to these fundamental questions regarding the permissible extraction and re-utilisation of the content of a database by a dedicated search engine.
2.4.3.2.4 Exceptions and limitations

The Dutch legislator literally transposed Article 9 of the Database Directive in Article 5 of the Act as follows:

The lawful user of a database which is made available to the public in whatever manner may not without the authorisation of the producer of the database extract or re-utilise a substantial part of the contents of the database:

- in the case of extraction for private purposes of the contents of a non-electronic database;
- in the case of extraction for the purposes of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved;
- in the case of extraction or re-utilisation for the purposes of public security or an administrative or judicial procedure.

In addition to these exceptions, the Dutch Database Act contains in Article 8(2) a unique provision, modelled upon Article 15b of the Copyright Act. The provision reads:

“The right, referred to in Article 2, paragraph 1 shall not apply to databases for which the public authority is the producer, unless the right is expressly reserved either in general by law, order or resolution or in a particular case as evidenced by a notification in the database itself or when the database is made available to the public.”

The main rationale behind this provision is that when transposing the Database Directive into Dutch law, the Dutch legislator did not want to put the makers of a database in a better position than authors of copyright-protected works. In other words, since works that are made available by or on behalf of public authorities are covered by the exception of Article 15b of the Copyright Act, there is no reason not to apply a similar exception to databases produced by public authorities.

2.4.4 Italy

2.4.4.1 Protection under the Copyright Act

The main source for copyright in the Italian legal system is to be found in Articles 2575 et seq. of Book V, Title IX, Codice Civile (Civil Code), where it is established that: “Formano oggetto del diritto di autore le opere dell’ingegno di carattere creativo che appartengono alle scienze, alla letteratura, alla musica, alle arti figurative, all’architettura, al teatro e alla cinematografia qualunque ne sia il modo o la forma di espressione.”

The following articles of Title V establish a set of basic principles regarding rules on first authorship and ownership, content of the right, a specific article on
plans and technical drawings, entitlement to the right, and formalities regarding its transfer. Article 2583 ends the section with a reference to the special law (the Copyright Act\textsuperscript{194}) for specific rules on the exercise and the duration of the right.

2.4.4.1.1 The work

Articles 1 and 2 of the Italian Copyright Act, identify what is protected under copyright law. Under Title I, Paragraph I ("protected works"), Article 1 grants copyright protection to works of ingenuity possessing creative character that belong to literature, music, figurative arts, architecture, theatre and cinematography, regardless of the manner or form of expression. In the second part of Article 1, computer programs and databases, which by reason of the selection or arrangement of their contents constitute the author's own intellectual creation, are also specifically included in the protection offered by copyright.

The following Article 2 offers a non-exhaustive list of works explicitly covered. Such list includes: literary, scientific, educational works in written or oral form; works of sculpture, paintings and figurative arts; works of cinematographic art (excluding mere documentation); photographic works (excluding photographs that do not constitute an original creation); computer programs; and databases defined as collections of works, data, or other independent elements, systematically and methodically organised, and individually accessible by electronic or by other means\textsuperscript{195}.

Creativity is not defined by the Act, but it is commonly accepted that a work, in order to possess such creative character, needs to represent somehow the personality of its author (his ingenuity). Courts have interpreted creativity as the particular form or expression given to a work by its author, including in those cases where the basic elements used for such results were commonly known and available, as long as the expression given to them by the author somehow represented his own subjective, creative and personal view\textsuperscript{196}.

Derivative works, or rather elaborations of creative character (elaborazioni di carattere creativo), such as translations in another language, transformations in another artistic or literary form, modifications and additions that constitute a substantial remaking of the original work, adaptations, reductions, and variations that do not constitute an original work, are protected by copyright without prejudice to the right protecting the original work (Article 4). This is to say that a derivative work is a work that is protected by itself, but which also infringes the copyright on the original work, and therefore a specific authorisation (such as a licence) is required.

\textsuperscript{194} See Legge 22 April 1941, n. 633 “Protezione del diritto d’autore e di altri diritti connessi al suo esercizio”.

\textsuperscript{195} See T. Milano, 19.03.2007, in Dir. Ind., 2008, 85.

2.4.4.1.2 Exclusive rights

Exclusive rights are listed under paragraph III of the Act. Article 12 opens the section dedicated to the protection of the economic utilisation of the work establishing that the author has the exclusive right to publish the work. Furthermore, the author has the exclusive right to economic exploitation of the work in any form and manner, original or derived, within the limits established by the law.

Articles 13 to 18-bis list the exclusive rights that the statute grants to authors of original works. The first of these rights is the right of reproduction in multiple copies of the work. Copies can be direct or indirect, permanent or temporary, partial or entire, in any manner or form, such as hand-made reproductions, printing, photography or cinematography (Article 13). Also explicitly covered is the right to put an oral work into a written form (Article 14).

The right of communication to the public is dealt with by Article 16, and covers the use of wired or wireless communications, by use of telegraph, telephone, radio and television (satellite and cable transmissions). The right of communication includes the right to make works available to the public in such a way that members of the public may access them from a place and at a time individually chosen by them.

The exclusive right to distribution provides the authors with the right to authorise or prohibit any form of distribution to the public by sale or otherwise (Article 17). The right to translate provides the exclusive possibility for authors to translate or modify their works, to publish the works in collections, and to modify the work in any form (Article 18). Article 18-bis deals with rental and lending rights.

Article 19 closes the section and states that the aforementioned rights are independent of each other and the exercise of one of them does not preclude the exclusive exercise of any other right.

2.4.4.1.3 Exceptions and limitations

Exceptions and limitations under the Copyright Act are contained in paragraph V “Exceptions and limitations”, although, before the enactment of the Info Directive the paragraph was dedicated to “Free uses”. The most relevant exception for the cases covered by this study is certainly represented by Article 70, which is a quite peculiar merger between the exception regarding scientific and educational uses (Article 5(3)(a) Info Directive), and the exception for quotations for criticism or review (Article 5(3)(d) Info Directive). The main consequence of such unnecessary combination is that the exception for scientific and educational uses is subject to the same quantitative limit established for the case of quotations for criticisms or review (the Italian legislator uses the terms “brani o parti di opera”), an effect which is not required by the EU framework. Courts have nonetheless proved to
be very keen on a literal interpretation of Article 70, stating that only reproductions of parts of a work can be covered by the exception under analysis.\footnote{197}

Of some interest is the case of Article 70 sec. 1-bis establishing that the publication on the internet for teaching or scientific purposes of low resolution or degraded images and music does not require any authorisation (è libera), provided that such publication does not pursue a commercial purpose (scopo di lucro) or any other form of compensation. This provision has never been interpreted by the courts, nor has the legislative decree that should determine the technical specifications regarding the meaning of low resolution images or music been enacted.\footnote{198}

\subsection*{2.4.4.2 Protection as databases}

Italy has adopted the Database Directive with legislative decree 169 of 6 May 1999\footnote{199}, which amended the Italian Copyright Act. The transposition technique chosen by the Italian legislator is based mostly on the translation of the Directive. Article 1 section 2 and Article 2 section 9 now list databases as protectable subject matter. However, a detailed regulation of databases protection under copyright law is included in new section VII (Arts. 64-quinquies to 64-sexies) under the title “Databases”. Sui generis protection of databases is contained in Title II-bis (Articles 102-bis to 102-ter) labelled “Disposition on the maker of a database – Rights and obligations of the user”.

\subsubsection*{2.4.4.2.1 Requirement for protection}

As mentioned, the transposition of the Directive into national law has followed a strictly literal translation of the former, and no particular observation need to be made in this respect in addition to what already has already been observed in the analysis of the Directive.\footnote{200}

\subsubsection*{2.4.4.2.2 Rights owner}

The maker (il costitutore) is defined as the person who realises relevant investments in the constitution, verification or presentation of a database. Differently from recital 41 (and from the French implementation), neither the initiative nor the risk parameter are listed, although they might arguably be subsumed in the concept of

\footnotesize

\begin{itemize}
\item See above Chapter 2.3.
\end{itemize}
investment. In the Dutch act, only the risk factor is explicitly mentioned. Such variety of definitions is probably to be explained with the fact that a definition of the maker of a database is only present in the recitals of the Directive not in the articles, leaving Member States with less guidance on how to implement such provision. The initiative versus factor dichotomy has been analysed by the literature, with different positions emerging\textsuperscript{201}.

Contrary to other jurisdictions, in Italy case law with regard to SGDR is relatively limited. An important decision, however, for the specific aspect of ownership of the \textit{sui generis} right is \textit{Edizione Cierre v. Poste}\textsuperscript{202}, where the court (first instance, though an Intellectual Property specialised section) established that a public administration does not qualify for SGDR as the EU and national legislators only speak of companies and firms and a public administration is neither a company nor a firm. Worthwhile is to mention that the tribunal makes a reference in its obiter to the fact that the public administration gathered such data when it was the only (public) monopolistic player in that field, adding an argument in favour of the prohibition of sole sourced databases. Previous decisions at the same level have however assumed that public administrations can be the rights owner of SGDR.

2.4.4.2.3 Exclusive rights

The rights granted by the Italian legal framework are based strictly on a literal implementation of the Database Directive and no relevant decisions have been delivered that suggest a different interpretation from the one based on the EU legal framework analysed above\textsuperscript{203}.

2.4.4.2.4 Exceptions and limitations

Some differences are, however, present for the case of exceptions and limitations. The Italian legislator has opted for an implementation that does not allow a specific exemption for acts of reproduction for private purposes of a non-electronic database, as made possible by Article 6(2)(a) of the Directive.

It must be observed that the Italian legislator in the specific case of Article 6(2)(b) has introduced an additional limitation that should be tested against the EU framework set forth by the Directive for potential incompatibility. In fact, for reasons not completely clear, Article 64-\textit{sexies} (a) introduces the condition that education or scientific research should not be developed within an enterprise (therefore posing a threat to the use by private educational institutions, a view that potentially conflicts with the interpretation that the commercial requirement for

\textsuperscript{201} See Beunen, note 188 above, p. 151.
\textsuperscript{203} See above Chapter 2.3.
educational cases should follow as per Recital 42 of the Info Directive). However, an even more serious flaw in the transposition is found in the second part of Article 64-sexies (a): “in the ambit of activities of access and consultation, eventual operations of permanent reproduction of the entirety or of a substantial part of the content on a different media are in any case subject to the authorisation of the right-holder”. Since Article 64-sexies (a) applies to copyright-protected databases, and only to the copyright on those databases, as the SGDR is regulated in a different section of the Act, such limitation seems to unduly restrict the possibility to use such databases for didactic and scientific purposes. However, when analysing Title II-bis (the two articles dedicated to the rights and obligations of users in cases of the SGDR), the absence of any exception or limitation to the SGDR as contained in Article 9 of the Directive catches the reader’s attention. Therefore, following a systematic interpretation, the Italian legislator has decided to take the chance offered by the EU legislator not to implement any SGDR exception. A different interpretation, one that would try to give sense to the wording of Article 64-sexies, would be one that sees in such article a merger of the exception for didactic and scientific uses both for copyright and for SGDR purposes. The major obstacle to such an interpretation is, as already pointed out, of a systematic nature (Article 64-quinquies and sexies are placed in a section of the Copyright Act that explicitly regulates copyright). In addition, a statutory interpretation argument can be found, as such articles use terms as author of a database and not maker.

An open door for an argument that SGDR exceptions and limitations are actually in force in the Italian legal system could be found in Article 71-diecies, which concludes the section dedicated to the exceptions and limitations to copyright. This article stipulates that exceptions and limitations to copyright law extend also to Article 102-bis (but not to 102-ter regulating rights and duties of users), to the extent applicable. Italian copyright law did not know a similar right to the SGDR (therefore limiting the possibility to maintain exceptions to SGDR not listed in Article 9 of the Directive), however such provision seems to permit the application to the SGDR of those limitations present in Italian copyright law that are similar or equivalent to those contained in Article 9 of the Directive, namely that for didactic and scientific purposes. It is not clear, however, why such an inscrutable drafting technique has been chosen to achieve something that is indisputably foreseen by the EU legislator. Only future case law will tell us which one of the proposed interpretations will be held to be correct.

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204 Recital 42 reads “When applying the exception or limitation for non-commercial educational and scientific research purposes, including distance learning, the non-commercial nature of the activity in question should be determined by that activity as such. The organisational structure and the means of funding of the establishment concerned are not the decisive factors in this respect.”.
2.4.5 France

2.4.5.1 Protection under copyright law

In France copyright is regulated in the *Code de la Propriété Intellectuelle* (Intellectual Property Code, IPC\textsuperscript{205}) which deals with literary and artistic property as well as with industrial property.

2.4.5.1.1 The work

Protected subject matter is any work of the intellect (*toutes les œuvres de l’esprit*), regardless of the genre and form of expression, merit or purpose (Article L112-1 IPC). In order to be protected by copyright such works have to meet some level of originality, usually defined as a creative effort carrying the personality of its author, an intellectual contribution of the author, or choices reflecting the author’s personality\textsuperscript{206}. Article L112-2 offers the customary non-exhaustive list of protectable works. Of particular relevance for our case are:

>*les livres, brochures et autres écrits littéraires, artistiques et scientifiques*; *les conférences*; *les compositions musicales avec ou sans paroles*; *les œuvres cinématographiques*; *les œuvres de dessin, de peinture, d’architecture, de sculpture*; *les œuvres graphiques*; *les œuvres photographiques*; *les illustrations, les cartes géographiques*.

Also protected are translations, adaptations, transformations or arrangements, anthologies, collections of works or other data, such as databases, which for the selection or arrangement of the content constitute intellectual creations (Article L112-3).

2.4.5.1.2 Exclusive rights

Article L122-1 establishes that the author’s right of exploitation includes the right of *représentation* and the right of reproduction\textsuperscript{207}. The former consists in acts such as communication to the public by any means, including public presentation, public transmission, and any other dissemination throughout a telematic network\textsuperscript{208}.

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\textsuperscript{205} Code de la propriété intellectuelle created by loi n° 92-597 du 1er juillet 1992, as amended.

\textsuperscript{206} See, for example, Cass. civ. 12 July 2006, n. 05-17555; Cass. civ. 2 March 1999 n. 97-10179; or Cass. civ. 13 November 2008, n. 06-19021.

\textsuperscript{207} There are some discussions on the correct translation of “droit de représentation”. The translation of the IPC available on the official website Legifrance refers to “the right of performance”, whereas others refer to “the right to publicly display”, see in general A. Lucas and H.-J. Lucas, *Traité de la propriété littéraire et artistique*, 4th edition, Paris, Lexis-Nexis, 2012.

\textsuperscript{208} See Article L122-2 IPC.
The right of reproduction consists in the material fixation of the work through any process, such as printing, drawing, photography, and any other mechanical or magnetic recording.

2.4.5.1.3 Exceptions and limitations
Exceptions and limitations to copyright are regulated under Article L122-5 IPC. Of particular interest for this study are the exemptions from author’s authorisation of quotations justified by the purposes of criticism, education, information or scientific character on condition that the name of the author and the source are cited\textsuperscript{209}. Also allowed – under the same general obligation to cite the author and the source – are the “representations” or reproductions of excerpts of works, with the exception, inter alia, of works conceived for pedagogic purposes, for the scope of illustration for teaching and research, but not for recreational activities, as long as the public for which such “representations” or reproductions are intended is mainly composed of pupils, students, teachers or researchers. The article also requires the absence of commercial exploitation in order to benefit from the aforementioned exemption, and sets forth a general obligation of fair compensation for authors.

Necessarily present is the exception regarding temporary and transitory acts of reproduction that are part of a licit use or transmission and do not possess independent economic significance (this is the only mandatory exception contained in the Info Directive)\textsuperscript{210}.

2.4.5.2 Protection as databases
France has implemented the Database Directive into the IPC with law n. 98-536 of 1998, which amended parts of the first book of the Code introducing the new subject matter of databases for copyright protection, and creating a new Title IV in Book 3 which deals with the rights of database producers\textsuperscript{211}. Regarding the implementation of the copyright protection for databases, the French legislator has generally adhered to the wording of the Directive.

2.4.5.2.1 Requirement for protection
Article L112-3 offers standard copyright protection to databases which, for reasons of selection or arrangement of the content, constitute the author’s intellectual creation.

\textsuperscript{209} See Article L122-5(3) IPC.
\textsuperscript{210} See Article L.122-6 IPC.
\textsuperscript{211} The French legislator has preferred the word “producteur” in the implementation of the Database Directive to the word “fabricant” (= maker) present in the French version of the Directive. The word is usually translated as “database producer” to reflect the difference. See Lucas and Lucas, note 207 above, pp. 951 et seq.
Article L341-1 requires a financial, material or human substantial investment in the constitution, verification or presentation of the database in order to offer sui generis protection to the producer.

In a number of decisions French courts have applied a low threshold for the requirement of substantial investment, although many of the cited decisions pre-date the 2004 ECJ saga establishing that investments in the creation of the database do not qualify in order to establish SGDR protection212.

2.4.5.2.2 Rights owner

The producer (le producteur) of the database is the person who takes the initiative and bears the risk of the corresponding investment, in accordance with the Database Directive213. The French implementation is closely linked to Recital 41 of the Database Directive and mentions both the initiative as well as the risk factor. As seen, the definition of the producer of a database is probably one of the few aspects whose specific wording tends to vary at the national level.

2.4.5.2.3 Exclusive rights

According to Article L342-1, the database producer has the right to prevent the permanent or temporary extraction, understood as a transfer in a different medium, of all or a quantitatively or qualitatively substantial part of the contents of a database by any means and in any form. On the issue of extraction, an interesting ruling should be mentioned. In 2011, the Court of First Instance in Paris ruled that a search engine that selected and indexed pages of a website to provide hyperlinks matching the requests of its users did not extract or reuse parts of the database.214 This ruling has not been confirmed or reversed by any higher courts. The producer can also prevent the making available to the public of all or a substantial part of the database in any form. At the same time, the producer can prevent the repeated and systematic extraction or reuse of insubstantial parts as long as such operations manifestly exceed the normal conditions of use of the database215.

2.4.5.2.4 Exceptions and limitations

Article L342-3 lists the exceptions and limitations to copyright in databases: extraction or reuse of a non-substantial part of the database by a user who has a lawful access to it (Article L342-3(1)); extraction for private use (Article L342-3(2)); reuse by people with disabilities (Article L342-3(3)); reuse for teaching and

212 See Beunen, note 188 above, p. 144. See also TGI Paris 25 April 2003; TGI Strasbourg 22 July 2003.
213 See Article L341-1 IPC.
214 See TGI Paris, 1 February 2011.
Forms of legal protection

Some significant differences can be observed in the parts regarding the exceptions and limitations to copyright in databases. First of all the mandatory exceptions present in Article 6(1) of the Directive have been implemented more restrictively than in the Directive. In fact Article L122-5 paragraph 5 of the Code states that the acts necessary for access to the content of an electronic database for the needs and within the limits of the use as foreseen in the contract do not require the author's authorisation. As has been noted, in light of the mandatory nature of Article 6(1) of the Directive the French implementation could be found to be in contrast to EU copyright law for a number of reasons. First of all, by mentioning only electronic databases it should be inferred that such provision is not applicable to non-electronic ones, although the Directive does not make such a distinction, and in fact it should be held that EU database law allows for an exception that applies to both electronic and non-electronic databases. Secondly, the French provision only lists acts necessary for access to an electronic database, while the Directive explicitly mentions all the acts listed in Article 5 that are necessary for access and normal use of the database. It must be recalled that the acts listed in Article 5 include temporary or permanent reproductions, translations, adaptations, arrangements and any other alteration, distribution, communication, display or performance to the public of the original or of any modified, adapted or translated parts. Regarding the exceptions for illustration for teaching and scientific research, the general provision of Article 122-5(e) is applicable to all copyright-protected subject matter and therefore also to databases so protected. The only observation is that the French provision requires fair compensation for such uses, something that the Directive does not mention. As to whether other exceptions and limitations that are traditionally authorised under national law (Article 6(2)(d) of the Directive) are applicable under French law, no specific reference is made in the Code. It seems that an interpretation in line with the general principles of law would admit that pre-existing exceptions that apply to copyright should apply also to databases, as long as those are protected by copyright.

Regarding exceptions to the SGDR, the French legislator took the opportunity to introduce an exception for private purposes for cases of extraction of non-electronic databases (Article L342-3(2)), and for extraction and re-utilisation for illustration for teaching or scientific research (Article L342-3(4)) although once again requiring fair compensation. The exception for public security or administrative or judicial procedures is to be found in a different part of the Code, which applies generally to all rights covered by that section (copyright, neighbouring rights and the SGDR). The wording of such exceptions consequently reads slightly differently from that contained in the Directive.

216 See Lucas and Lucas, note 207 above, pp. 988 et seq.
An important observation is the omission by the French legislator in Article L.342-3 dealing with the exceptions and limitations to the SGDR of the lawful user and it should therefore be concluded that such exceptions are available to any user.

Finally, France has introduced a new exception to the SGDR on the basis of the implementation of the Info Directive. Such exception applies to legal persons and publicly accessible institutions such as libraries, which are allowed to make extractions and re-utilisation of substantial parts of a database for personal consultation by disabled persons and for non-commercial purposes (Article L.342-3(3)). Clearly such exception is not listed in the Directive, and this is one of the criticisms that can be brought against the already mentioned unreasonably limited number of exceptions and limitations to the SGDR under EU law.

Finally, the French implementation of the Directive, unlike the case of copyright exceptions, indicates that contractual provisions in violation of the exception of Article L.342-3(1) should be deemed null and void. The departure from the European standard this time is observable in the addition of two steps of the three-step test for the case of the SGDR, something not required by the Directive.\footnote{See Article L342-3 last sentence: “Les exceptions énumérées par le présent article ne peuvent porter atteinte à l’exploitation normale de la base de données ni causer un préjudice injustifié aux intérêts légitimes du producteur de la base”}.

2.4.6 Poland

2.4.6.1 Protection as a copyright work

Research data may be subject to copyright (author’s right) if it satisfies the criteria of protection specified in the Polish Copyright Act (ustawa z dnia 4 lutego 1994 r. o prawie autorskim i prawach pokrewnych, Dz. U. 2006 r. Nr 90, poz. 631, consolidated version, subsequently amended – PrAut).

2.4.6.1.1 The copyright work

Article 1.1 PrAut defines the copyright work as any result of creative activity having individual character, expressed in any form, regardless of its value, purpose, or manner of expression.

2.4.6.1.1.1 Kinds of work

Article 1.2 PrAut contains a non-exhaustive list of works. The list includes works expressed using words, mathematical symbols or graphical signs (including computer programs); photographs; industrial designs; works of architecture; musical works; audiovisual works; etc.
There is a whole set of special provisions regarding computer programs, and a separate set regarding audiovisual works. There are also some special provisions referring to e.g. works of architecture and photographs.

Article 4 PrAut contains a list of works explicitly excluded from copyright protection. These are: Acts of law and official drafts of such Acts; government documents, materials, signs and symbols; published patent and other industrial property specifications; simple press information.

2.4.6.1.1.2 Work of authorship

The fact that the work belongs to categories mentioned in Article 1.2 PrAut does not by itself imply protection. Conditions of protection are mentioned in Article 1.1 PrAut (the definition of work of copyright). Also Article 1.2^1 may be of interest, since it confirms that the protection applies only to forms of expression and not to the underlying ideas, procedures, methods, principles of operation or mathematical concepts.

The requirements for protection included in Article 1.1 can be restated in the following way:

A work has to be made by a natural person, and reflect the creator's individuality. The personality requirement excludes authorship of computers, animals, or legal persons. Individuality (creativity) is often measured by analysing whether a different person would make a similar contribution in the same circumstances, although this should not be the only criterion taken into consideration.

There is no requirement of fixation in PrAut, but the work has to be expressed in some form noticeable by someone other than the creator.

The work has to be a result of creative activity, which basically excludes ideas as well as results determined by circumstances external to the author. The level of creativity required is not high; it suffices that the work includes just a minimal level of creativity. Hence, copyright protection is relevant mostly with regard to scientific works such as articles, books and other publications comprising at least some arrangement or analysis of data. Data itself is not copyright protectable, but a dataset may benefit from protection if there is at least minimum creativity in the collection or arrangement of the data.

2.4.6.1.2 Authorship and ownership

Although only a natural person may become a creator of a copyrighted work, such a person is not always the (only) beneficiary of protection. PrAut specifies some cases where economic rights subsist in a person other than the creator (collective works, computer programs). Otherwise, both moral and economic rights belong initially to the creator (or jointly to creators), but economic rights might subsequently be transferred to another person. In the case of works made in the course of employment, they are transferred to the employer upon receipt of the work,
pursuant to Article 12 PrAut. The exact scope of the transfer depends on the employment contract, but it seems such contracts are not subject to general strict rules requiring, for example, specification of all fields of endeavour in a contract related to copyright subject matter.

In case of scientific works made by employees of scientific institutions, the employer obtains only the first publication right (subject to remuneration) – Article 14 PrAut. Another exception to the Article 12 rule is computer programs – if a computer program is made by an employee in the course of employment, all rights to the program subsist initially in the employer.

Moral rights are non-transferable, but it is possible to contractually undertake not to exercise them.

The holder of economic rights may license them for use instead of transferring them. Licences are contracts, and may be exclusive or non-exclusive.

Both contracts that transfer copyrights and licences are subject to certain rules of PrAut. One of the most important rules is Article 41.2, which requires that fields of endeavour (put simply, different forms of use) are specified (enumerated). The contract covers only such fields that are enumerated in it. There are also other rules intended to protect individual authors against users, the latter traditionally perceived as having a stronger position in negotiations.

2.4.6.1.3 Exclusive rights

According to Article 17 PrAut, economic rights are exclusive rights to use and dispose of the work in all fields of endeavour, and to obtain remuneration for the use of the work. Article 50 contains an example list of fields of endeavour, grouped into uses involving reproduction, distribution (of tangible copies, such as sale, donation, lease or rental), and communication to the public. The distribution right in Poland is exhausted by authorised distribution of original or copies of the work in the territory of the EEA, except for lease and rental of such original or copies.

The right of communication to the public involves all forms of dissemination that do not involve tangible media. These include: performance, presentation, screening, playing, broadcasting, retransmitting, as well as making the work available so that anyone may access it at a time and in a place chosen by them (such as when using the internet).

2.4.6.1.4 Right of adaptation

Similar to the German regulation, making adaptations does not constitute copyright infringement. Only using a derivative work requires permission of the copyright holder of the original (and of the copyright holder of the derivative) work. There is no definition of a derivative work, but it is generally agreed that it must be a result of a creative transformation of copyright-protected elements of an original work. Inspirations are not considered derivative works.
2.4.6.1.5 Limitations

It is not an infringement of copyright to use ideas and facts underlying the creative expression of the work. The use of the expression, in whole or in part, may be possible without the consent of the copyright holder if it falls under one of the limitations and exceptions specified in section 3 of PrAut. These include personal use, quotation, use for purposes of scientific research and teaching, making available in libraries, archives and schools (including digital on-site terminals) and other exceptions.

It is generally accepted that these limitations do not result in any right of users, but rather they can be used as a legal defence against infringement claims. It is often submitted that these exceptions should be narrowly interpreted. Undoubtedly, apart from vague terms of individual provisions, they are also subject to the three-step test, which has been copied to PrAut in Article 35.

2.4.6.2 Protection as databases

2.4.6.2.1 Copyright protection

It is possible to obtain copyright protection for collections of various elements (the elements themselves do not have to be protected by copyright) if there is a creative activity involved in the selection or arrangement of the elements. Such collections might include scientific databases, for example if the criteria for selection or arrangement of the data were not determined by external circumstances. Given the fact that such criteria are often predetermined and the data itself represents mere facts or ideas, copyright protection for scientific databases should be regarded as an exception, but may not be definitely excluded.

Copyright-protected databases are subject to a more narrow personal use exception. It is possible to use them only for personal scientific use not related to any commercial gain. Such databases may not be made available by libraries, archives and schools without authorisation.

Consent of the copyright holder is necessary for the mere creation of an adaptation of a copyright-protected database, not just for the use of such an adaptation as is the case with other works.

2.4.6.2.2 Sui generis right

If a copyright-protected database additionally satisfies criteria for sui generis protection, it benefits from two protection regimes. If there is no creativity involved, the sui generis protection might still apply. This regime is implemented in a separate Act (ustawa z dnia 27 lipca 2001 r. o ochronie baz danych, Dz.U. z 2001 r., nr 128, poz. 1402 as amended – Ubd).
2.4.6.2.2.1 Requirements for protection
The database is protected by the *sui generis* right if its contents have been systematically or methodically arranged, and are individually accessible. The arrangement, verification or presentation of the database must have required a substantial investment. If there was no investment, the protection does not apply.

2.4.6.2.2.2 Right owner
The owner of the database right is the producer, i.e., the one who makes the substantial investment in the creation of the database (a natural person, or any other legal entity).

2.4.6.2.2.3 Scope of protection
The rightholder has two rights: the right to extract data and the right to reuse the data. The rights do not extend to lease without remuneration (Article 3 Ubd), and they do not extend to insubstantial parts of the database (provided that such use does not interfere with normal use of the database and is not contrary to the reasonable interest of the producer – Article 7.3 Ubd).

2.4.6.2.2.4 Limitations
The Ubd contains a specific list of limitations to the *sui generis* right. Article 8 states that it is possible to use a substantial part of a database for personal use (but only of a non-electronic database), for illustration, for teaching or research (if the use is non-commercial), and for purposes of internal safety, court or administrative procedures. These limitations are subject to the three-step test.

2.5 National differences
Whereas copyright requirements are now in the process of being harmonised by the case law of the ECJ, the analysis of the rights situation in the EU as well as in the different European countries shows that there are still some notable differences, especially with respect to the SGDR, which is of most importance for the creation and use of the e-infrastructure of OpenAIREplus. This is surprising as this right was introduced by the European Community itself and should be almost completely harmonised.

2.5.1 The rightholder
The first important issue refers to the question of who will be the rightholder of the *sui generis* right. According to Article 7 of the Database Directive, the Member States shall provide for the *sui generis* right for *the maker of the database*. According to
Recital 41 of the Database Directive, the maker of the database is the person who takes the initiative and the risk of investing. However, it is still unclear how the ownership has to be verified in the case of public funding. It is remarkable that in most of the Member States, there is no regulation of this issue, and furthermore even no discussion about this fundamental question. The Netherlands so far is the only Member State to have explicitly regulated the exercise of the *sui generis* right by public sector bodies and generally denies a public authority the right to exercise its exclusive database right218. On the other hand, there are strong indications (but no explicit answer) from the ECJ which can be interpreted in the way that public bodies are able to become owners of the *sui generis* right219.

This uncertainty is also of relevance for OpenAIREplus, since it has been created as a publicly funded project. The EU as well as the research entities involved bear part of the financial risk for the creation of OpenAIREplus220. This could mean that one or all of them have to be considered rightholders of a *sui generis* right in OpenAIREplus. However, under the Dutch regulation, this would be excluded.

2.5.2 Exception for scientific research

Another slightly confusing issue arises if one looks at national implementation of the exceptions to the relevant IP rights of copyright and the *sui generis* right.

2.5.2.1 Copyright

According to Article 5(3)(a) Info Directive, the Member States may provide for exceptions or limitations to the exclusive rights in the frame of copyright in the case of use for the sole purpose of illustration for teaching or scientific research, as long as the source, including the author’s name, is indicated, unless this turns out to be impossible, and to the extent justified by the non-commercial purpose to be achieved221.

First it should be noted that these exceptions are optional and the Member States do not have to implement these limitations. However, the result is a situation where Member States still have different rules and regulations in this context.

In Germany, Article 53 UrhG contains the right of copying a work for personal use or one’s own scientific purposes. A use is considered to be private if it belongs to the domestic sphere or the circle of family and friends222; a scientific use

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218 See above Chapter 2.4.3.2.2.
219 See above Chapter 2.3.5.
220 See above Chapter 2.3.7.
221 Cf. also Article 6(2)(b) Database Directive for copyright-protectable databases.
222 Cf. W. Nordemann, in Fromm/Nordemann (eds), note 133 above, § 53, para. 6.
is related to a scientific activity\textsuperscript{223}. In both cases it is only permitted to make single copies of a work\textsuperscript{224}. Pursuant to Article 52a UrhG published small parts of a work, works on a small scale and individual articles from newspapers or magazines may be made publicly available to a specific, defined group of participants for the purpose of non-commercial scientific research. However, it should be noted that the latter provision will no longer be applicable after 31 December 2014\textsuperscript{225}.

In the UK, section 29(1) CDPA 1988 provides that fair dealing with an original work will not constitute an infringement if it is carried out for research with a non-commercial purpose or private study. However, the act contains no definition of which kind of dealing with a work is fair and which is not and it is up to the courts to establish in each case whether a dealing is fair or not.

In Poland, the exception for scientific research according to Article 27 PrAut covers “use” of works, which is a very broad term and potentially covers both reproduction and public communication. At the same time it explicitly mentions that scientific and educational institutions are allowed to reproduce only portions of works for their own ends.

In the Netherlands, the research exception covers reproductions as well as acts of making a work available to the public. However, Dutch law requires equitable remuneration of rightholders. Fair compensation is also required by the French legislation\textsuperscript{226}.

In Italy, the exception is regulated together with the exception for quotations for criticism or review\textsuperscript{227}.

In addition, Article 5(5) Info Directive states in line with the three-step test that exceptions and limitations shall only be applied in certain special cases which do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the rightholder. When applying the exception or limitation for non-commercial scientific research purposes, the non-commercial nature of the activity in question should be determined by that activity as such. The organisational structure and the means of funding of the establishment concerned are not decisive factors in this respect\textsuperscript{228}.

The provision of such exceptions or limitations by Member States should, in particular, duly reflect the increased economic impact that such exceptions or limitations may have in the context of the new electronic environment. Therefore, the scope of certain exceptions or limitations may have to be even more limited

\textsuperscript{223} “Scientific” means an activity that is taught at universities. Cf. ibid., § 53, para. 19; with a broader definition Dreier, in Dreier/Schulze (eds), note 135 above, § 53, para. 23.

\textsuperscript{224} This means no more than seven copies, cf. BGH, GRUR 1978, 474 – Vervielfältigungstücke.

\textsuperscript{225} Cf. Article 137k UrhG.

\textsuperscript{226} See above Chapter 2.4.5.1.3.

\textsuperscript{227} See above Chapter 2.4.4.1.3.

\textsuperscript{228} Recital 42 Info Directive.
when it comes to certain new uses of copyright works. The ECJ confirmed that
the exceptions generally need to be interpreted narrowly.

In the light of the foregoing, the diverse regulations in European countries and
the wording of the Info Directive, there are many indications that the scope of the
exception for scientific use is rather limited. It seems to be impossible to intro-
duce an e-infrastructure whose reproductions and public communications would
completely fall within the scope of the exception for scientific use in every Euro-
pean country.

2.5.2.2 Sui generis database right

According to Article 9(b) Database Directive, Member States may stipulate that
lawful users of a database that is made available to the public in whatever manner
may, without the authorisation of its maker, extract or re-utilise a substantial part
of its contents in the case of extraction for the purposes of scientific research, as
long as the source is indicated and to the extent justified by the non-commercial
purpose to be achieved. Such operations must not prejudice the exclusive rights of
the maker to exploit the database and their purpose must not be commercial.

The exceptions mentioned in Article 9 Database Directive are not mandatory,
which means that the regulations in the different Member States are not fully
harmonised.

In Germany, Article 87c (1) Nr. 2 UrhG states that the copying of a substantial
part of a database is possible for one’s own private or scientific use. It should be
noted that just the copying of data is possible and not re-utilisation. Hence, mak-
ing a substantial part of a database available to the public (for example in infor-
mation networks like the internet), even for scientific use, is not permitted.

In the UK, according to regulation 20 Database Regulations 1997, the data-
base right in a database that has been made available to the public is not infringed
by fair dealing with a substantial part of its contents if that part is extracted from
the database by a person who is a lawful user of the database, it is extracted for
the purpose of illustration for teaching or research and not for any commercial
purpose, and the source is indicated. This exception, too, only allows extraction
and not re-utilisation of substantial parts of a database.

The French provision in case of reuse of substantial parts of databases for re-
search purposes seems to require fair compensation for such use.

In Poland, the research exception is subject to the three-step test.

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229 Recital 44 Info Directive.
230 ECJ Case C-403/08, C-429/08, Football Association Premier League Ltd v QC Leisure et al, [2011]
EuZW 2012, 466, para. 162.
231 Recital 50 Database Directive.
232 Thum, in Wandtke/Bullinger (eds), note 145 above, § 87c, para. 31.
233 See above Chapter 2.4.5.2.4.
234 See above Chapter 2.4.6.2.2.4.
The Netherlands literally transposed Article 9 of the Database Directive into national law\(^{235}\).

On the other hand, there are states like Italy, where it is rather unclear how the exception should be interpreted\(^{236}\).

Hence, the legal situation in the Member States is divergent and partly confusing. In most cases the scope of the scientific research exception is strictly limited. Moreover, for an infrastructure that cannot take account of national borders the strictest legal rules will be determinative. So it seems impossible to make use of scientific research data in an open and participatory infrastructure such as OpenAIREplus. It is only permitted, if at all, for a single researcher to copy data out of a protected database.

2.5.3 Linking

The linking of data is an issue that is also not interpreted consistently all over Europe. There is agreement that linking does not constitute a relevant act of reproduction or extraction according to copyright or the SGDR. However, it is still unclear whether linking can be seen as an act of public communication.

Some national courts have decided, that a hyperlink (even a deep link) referring to the content of an external and freely available website does not infringe the publicly making available right of the rightholder\(^{237}\). However, the right is infringed when the hyperlink results in the circumvention of technical protection measures the rightholder has taken to prevent uncontrolled public access\(^{238}\), e.g. when he has taken measures to prevent direct access to information without visiting the homepage\(^{239}\). This interpretation seems to be in line with Article 3 Info Directive and the broad interpretation of the communication to the public right by the ECJ. It allows linking to information that is freely available on the internet, but restricts it in cases where the rightholder has taken measures to prevent (direct) accessibility.

In most other states, there has not yet been a decision providing clear rules on whether hyperlinking should be seen as public communication.

In Poland, on the other hand, it was held, that deep linking constitutes making available to the public\(^{240}\). This decision concerns the personal right of a photographed person, but it analyses the “making available” right defined in copyright

\(^{235}\) See above Chapter 2.4.3.2.4.

\(^{236}\) See above Chapter 2.4.4.2.4.

\(^{237}\) See BGH, GRUR 2003, 958 – Paperboy; OGH (Austrian Supreme Court of Justice), GRUR Int. 2012, 817 – Vorschaubilder/123people.at–Thumbnails.

\(^{238}\) Cf. OGH, GRUR Int. 2012, 817 – Vorschaubilder/123people.at–Thumbnails; BGH, MMR 2011, 47 – Session-ID.

\(^{239}\) BGH, MMR 2011, 47 – Session-ID.

\(^{240}\) Sąd Apelacyjny w Krakowie z dnia 20 lipca 2004r. (I ACa 564/04, TPP 2004/3-4/155).
law. In the Czech Republic it was explicitly held that hyperlinking constitutes a communication to the public within the meaning of copyright\textsuperscript{241}. Hyperlinking being a central feature of the www-communication structure, considerable uncertainties remain as to the legal situation. Even with only one or two countries in the analysis diverging completely from a rule leaning towards avoiding infringement, the situation in the other Member States appears to be far from settled. With European legislation not entirely clear on this point, the actual reference to the ECJ\textsuperscript{242} will hopefully clarify this issue finally.

2.6 Know how/unfair competition/Patent

Apart from the rights discussed, information may be subject to protection under schemes of know-how protection or unfair competition. The term “know-how” refers to knowledge and skills in connection with the use of products, procedures or business. It is most common in the context of information that is necessary to utilise a patented invention without being part of the patent protection itself.

In legal terms such know-how is mostly protected by the laws referring to secret or confidential information (trade secret law). This information may be of a technical as well as a business nature. This is still purely national law and also no European scheme of protection exists in this respect. However, an international instrument for the protection of confidential information was established in Article 39 of the TRIPs agreement. While its character as intellectual property is still disputed the protection is mostly rooted in national unfair competition laws.

The general core of this protection is the relationship of confidentiality with respect to a company that uses the information (“undisclosed information”). Pursuant to Article 39 TRIPs the protection is of a relative nature meaning that the protection is limited to the time when the information is undisclosed, and, moreover, obtaining the information with legal means is not prohibited.

The national law of the member states of the WTO incorporates the definition of Article 39(2) TRIPs:

“Natural and legal persons shall have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices so long as such information:

(a) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;

(b) has commercial value because it is secret; and

\textsuperscript{241} Case 8 Td 34/2012 – liberecký pirát.

\textsuperscript{242} ECJ case 466/12, Svensson et al v Retriever, Reference of 18 October 2012.
(c) has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.”

As can be seen from this provision the protection is dependent on different factors to be considered. Even machines or procedures that are used on the market may include secret information as long as this information is not readily accessible with reasonable efforts. For example, in the case of software that is distributed only in object code the secret information contained in the software, which can only be extracted from the human readable source code, may not be regarded as obvious when even the process of reverse engineering the software (reverse compilation) will not result in a version of the source code that reveals the relevant information243.

The protection is directed against disclosure, acquaintance and use by third parties. It is further refined by a Footnote to Article 39 TRIPs:

“For the purpose of this provision, “a manner contrary to honest commercial practices” shall mean at least practices such as breach of contract, breach of confidence and inducement to breach, and includes the acquisition of undisclosed information by third parties who knew, or were grossly negligent in failing to know, that such practices were involved in the acquisition.”

If a third person receives secret information that has been unlawfully acquired he will be liable with respect to further use of the information only in the case that he has knowledge about this state or should have knowledge (gross negligence). Once the information has become obvious and disclosed no secret protection can be enforced after that in the further chain of usage of the information. This is true even with respect to contractual prohibitions which cannot impose duties of confidentiality with respect to disclosed information. Those provisions would be invalid under theories of contract law and competition law. Only in cases where the information has been unlawfully acquired may non-disclosure duties be imposed under national law244. This does not include the case of unintentional disclosure.

It is apparent from the fact that protection is limited to obtaining secret information by unlawful means that the protection of confidential information will not play a major role in the field of research data if this data is made readily available for everyone. However, in a situation where a research study is kept confidential or a document with secret information is somehow linked to other data without being readily accessible, this scheme of protection may play a role. If a person makes efforts to obtain the information with unlawful means or receives


244 See BGH, GRUR 1985, 294 (296) – Füllanlage.
this information while it is still confidential and makes further use of it, he may be held liable under trade secret law. However, such cases will be really exceptional in the field under scrutiny here.

Other concepts of unfair competition law may refer to misappropriation of information and use of it in competition, which exist to different degrees in Europe as well as in the US. However, usually this protection is limited to information that constitutes a product or service in competition. Moreover this protection against free riding would have to be considered as being pre-empted by specialised rules like those existing under the *sui generis* protection schemes for databases. As far as this concept applies, no unfair competition protection may be invoked in addition. Even if this concept applies it does not provide absolute protection of this information but only the competitive use of a product or service to gain a competitive advantage.

In addition there are common concepts of unfair competition relating to taking or appropriating efforts in products and services that would lead to confusion regarding the source of the product or transfer of goodwill as to the reputation of the product. However, these concepts are usually pre-empted by trademark law rooted in national law as well as the European Community Trademark System. This is a separate form of IP that is not a subject of this study.

A special field for the protection of data as such refers to medical data. Article 39(3) TRIPs provides:

“Members, when requiring, as a condition of approving the marketing of pharmaceutical or of agricultural chemical products which utilize new chemical entities, the submission of undisclosed test or other data, the origination of which involves a considerable effort, shall protect such data against unfair commercial use. In addition, Members shall protect such data against disclosure, except where necessary to protect the public, or unless steps are taken to ensure that the data are protected against unfair commercial use.”

Some countries follow an approach of exclusive protection of this data for up to ten years after market introduction even in cases where no patent is issued. Most developing countries reject this approach which may not be based on Article 39(3) TRIPs.
39(3)\textsuperscript{247}. Moreover, many countries have established confidentiality protection with respect to all data contained in the application for approval of marketing of medical products.

Patent law is directed at the protection of technical functionality that is implemented in protected machines or procedures. Hence, if the technical structure of the OpenAIREplus infrastructure is based on patented information, patent law may apply. However, in Europe some kind of technical effect has to be present that is not assumed in pure information processing. While the use and distribution of the protected invention is limited by patent laws, the information on the patented invention as such is freely available through the patent specification, which is just the trade-off that patent law seeks to achieve. Hence, even if scientific information is included or related to patented information this information itself can freely be copied and distributed as long as the protected product or procedure is not used or distributed. Copyright may only subsist in the patent specification. As a result patent law will not play any role in the protection of research data as such.

Hence, as regards the OpenAIREplus infrastructure it has to be ascertained that any functionality that is patent protected is used only if patent licences have been obtained. This will mostly be implemented by the relevant systems software, which may be covered by patents on the featured technical functionality. In addition any copyright subsisting in the software used must be taken into account.