

HOMO FABBER AND THE LAW¹

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1. TECHNOLOGY AND ITS APPLICATIONS

3D printers replicate not just themselves but everyday objects as well. Professional 3D printers can be used in 3D print shops, the copy shops of the future, and in social manufacturing services, anyone can offer the capacity of his or her 3D printer, or distribute templates to print utility or design objects. Even The Pirate Bay now includes a Physibles section for 3D models. Online platforms such as Shapeways, Ponoko and i.materialise offer a professional 3D printing service and also provide their users with easily operated online tools for producing and editing design files. The future of 3D printing is already being demonstrated by Teenage Engineering, a Stockholm-based company in Sweden. Instead of sending spare parts by post, customers can download a 3D model and produce the spare part themselves, using their 3D printer.

On their own 3D printers, most prosumers can currently only manufacture somewhat simple utility and design objects made of a single material (plastic, resin, plaster, metal powder, sand or brothy foods). However, experiments are already being conducted with printing techniques involving several materials, or using materials in different colours.

The digital templates are created using CAD (Computer Aided Design) software that can now be operated by non-experts. Either the 3D objects are modelled with the aid of software, or an existing object is photographed from several sides, with a 3D model then being computed using the images obtained. Templates can also be created using 3D scanners, for example with the Kinect motion controller.

Professional 3D printers with which large objects can be made cost much more than 100,000 Euros in many cases, although there are also smaller models for home usage,

¹ | This paper describes the legal situation in Germany only.

costing less than a thousand Euros on the market. With the latter, however, it is already possible to produce simple household goods, to make parts for hobby crafts, to print toys, or create jewellery. Few constraints are placed on one's own creativity, but not everyone will buy his or her own 3D printer. FabLabs or 3D print shops will come into being instead, similar to conventional copy shops, but allowing various 3D printers to be shared.

2. LAWS THAT THE HOMO FABBER SHOULD BE AWARE OF

3D printing raises a plethora of new legal issues, however. If the printed object is identical or similar to a protected product, this may constitute an infringement of existing copyrights, trademark rights, patents, utility models, or registered designs. For example, the Games Workshop Group, a game production company and maker of miniature figures for board games, has already taken action to remove 3D templates of the popular miniature figures from Lord of the Rings and Warhammer from Thingiverse, a website for sharing 3D design files.

2.1 Industrial Property Rights

A patent is granted for an invention that is novel and industrially applicable. It does not provide protection for eternity, but only for a particular duration. When the patent expires, the invention is free to be used. The pealess whistle, for example, was protected by a patent until 1966. Since then, whistles with two chambers tuned to easily distinguished pitches may be manufactured by any company. A utility model is the 'little brother' of a full-blown patent. In contrast to patents, a utility model is not intellectual property that has been subjected to examination but a right that is derived purely from registration. Whether a utility model actually confers protection or not is something that is not generally established until infringement proceedings are conducted. One example of a utility model was a goalkeeper's pullover protected on the outside with padding that was aimed at preventing the goalkeeper from being injured in goalmouth scrambles. A registered design is an industrial property right that grants the holder the exclusive power to exploit an aesthetic design (design, color, shape), for example for a key ring in the shape of stylized football players. Design protection ensues when the design is registered in the Design Register.

If the extent of protection conferred by a patent is violated, the patent proprietor has rights to injunctive relief, damages, information, submission of accounts, and the elimination of disturbance and to claims based on unjust enrichment. The same applies to utility models. A utility model may likewise be used by its proprietor only, and for that reason may not be used by others without the proprietor's consent. The same is true of registered designs. However, the legal effect of a patent, utility model or registered design does not extend to actions performed in the private

sphere for non-commercial purposes. Patents, utility models and registered designs may be used to satisfy directly one's own needs, in particular one's domestic needs. In the private sphere, not only is it permissible to use a protected product or to apply a protected method or process, one is also allowed to produce any number of a protected product for private use, which therefore includes production using 3D printers. Even offering such a product to others or bringing it into circulation is permitted, but only as unpaid neighbourly assistance. However, used products may subsequently be sold if they were initially produced within the private sphere. In addition to 3D products, it is also permitted to pass on 3D templates free within the private sphere, free of patents, utility models and registered designs. However, if a product or template is to be passed on to somebody in a permissible manner, the objective risk of intellectual property being infringed means that the person offering the product or design file must draw attention to the fact that use is only allowed in the private sphere.

Online marketplaces disseminating 3D templates that infringe patents, utility models or registered designs are committing acts of contributory infringement, due to breach of their 'Verkehrspflicht' (i.e., their 'duty to safeguard traffic', or duty of care) by not preventing or averting the infringement of intellectual property – in that such infringement is facilitated by the dissemination of 3D templates with the aid of the infrastructure provided (liability as accomplice). However, online marketplaces are only liable as accomplice, due to breaches of their duty of care, when there are specific indications of infringement or when they have been informed accordingly about breaches of law (with a cease and desist order). There is no general obligation to check every 3D design file on the portal for potential infringement of intellectual property. However, if there are reasons to suspect such infringement, the portal operators must contact the poster for information about the 3D file. If the poster remains silent, the Internet portal operators must conduct their own review, if necessary by consulting the relevant experts.

On-demand manufacturing of 3D products in order to satisfy private needs directly is permissible, since otherwise only those who can afford their own 3D printer would be able to enjoy the privilege. Acts commissioned from on-demand manufacturers without the consent of those holding the rights to patents, utility models and registered designs are not unlawful, therefore. This is conditional, of course, on the on-demand manufacturer not transgressing the limits to that privilege by manufacturing stocks of products for which there is a strong demand, for example, or by storing 3D design files in order to make them available to third parties. Commissioning an on-demand manufacturer with a 3D printer to make products that make use of patents, utility models or registered designs is permissible even when such production is not free and goes beyond reimbursement of pure expenses or the wages paid to the employee entrusted with the task of making the 3D product.

2.2 Trademark Law

According to the German Trademark Act ('Markengesetz'), third parties not having the consent of the trademark proprietor are prohibited from using signs for products or services that are identical or similar to those protected by the trademark. The same applies to business names and statements of geographical origin that are used in the course of trade to designate goods or services. Trademark law does not apply to private activities, however, because the prerequisite for an infringement of trademark rights is an act committed in the course of trade. A mark is used in the course of trade when use occurs in the context of a commercial activity pursued for financial gain, and not in the private sphere. This means that goods bearing a trademark may be used as a specimen for producing one's own 3D products, or 3D design files, for directly satisfying one's own needs. 2D or 3D trademarks may also be replicated in order to serve one's own needs. A private individual who dresses himself or herself in clothes bearing the trademark is not infringing the trademark in any legally relevant manner.

Online marketplaces that disseminate 3D products or templates on which trademarks are depicted, or which represent 2D or 3D trademarks, are not liable as tortfeasors or as accomplices to the infringement of rights if they have no knowledge of the specific infringement of rights that threatens to occur on their online marketplace. Nor are they liable as accomplices due to a failure to do something, in breach of their obligations. However, the operators of the online marketplace do bear liability if the platform user is a person engaged in a trade or business, but only when it is clearly evident to the operator of the online marketplace that the person is in fact conducting a trade. Whether this is evident or not may be based on circumstances other than the actual offer of products, such as recurrent presence of the seller, or recurrent offering of the same kind of 3D products or 3D design files.

There is no general obligation to perform prior inspections, however. Nor is the online marketplace obligated to check content at a later point, unless there is a specific reason to do so. However, the operator has a special duty to check content if he has already been informed of at least one infringement of rights of some significance and there is a manifest risk of further infringements of rights by individual users.

On-demand manufacturing of 3D products, on which trademarks are shown or which represent 2D or 3D trademarks, is permissible if application of the trademark serves to directly satisfy private needs and as long as there is no perceptible evidence for the on-demand manufacturer that the 3D products made in on-demand manufacturing are being placed on the market.

2.3 Copyright Law

Copyright law safeguards exclusive rights to exploit and to prohibit the use of created works. The extensive rights that are granted by copyright are not unlimited, however, but are confined to certain kinds of use in order to protect freedom of opinion, freedom of the press, broadcasting freedom, freedom of the arts, freedom of science and freedom of information, and to protect the private sphere. In addition to 3D products, 3D templates may also be produced and passed on to others within the private sphere, provided that they are copied and passed on within the private sphere for non-commercial purposes. A design does not enjoy protection as intellectual property if its features are based purely on technical factors, even if they are freely selectable or replaceable, and there is no evidence of artistic performance. A work does not get copyrighted simply because an object has been designed or crafted or one technical feature has been exchanged for another.

A work is deemed to be copied or reproduced not only by one-to-one copies, but also when the work is transformed into a different material, a different dimension, or a different size. Not only is the reproduction of 2D or 3D works in the form of photographs or films deemed to be copying, but also the execution of plans and drafts in respect of such works. The manufacturing of 3D products from creative works therefore constitutes copying as well, because the only relevant criterion is whether or not the embodiment reproduces the work as such. The material used – be it plastic, resin, plaster or metal powder, sand or potato starch – is of no legal significance. The same applies to the production of 3D design files from creative works, which has already led to the first legal dispute over copyright. The case in question concerned a ‘3D Penrose triangle’, an impossible figure. Impossible figures are optical illusions in the form of 2D figures representing 3D constructs that cannot physically exist. A designer published a photo of such an impossible figure. Another designer developed a 3D design file for printing the 3D Penrose Triangle and published the design file on an online platform for digital designs, which promptly received the first ever takedown notice for a 3D design. Since a work is protected not only as a whole, but also in its separate parts, using only parts or individual elements of a work copyrighted by someone else is also deemed to be copying or reproducing in violation of copyright. However, it is then necessary to examine whether the parts being used can be protected singularly.

The act of copying or reproducing a work does not necessarily need to be done by a private individual, but can also be performed by a third party (manufacturing on demand); however, the actions of the third party must be limited to the technical process of reproduction, and the third party must adhere to specific instructions for making the copies. It is not generally permissible to produce an unlimited number of copies, however. The relevant criterion is the respective purpose being pursued in making the copies. In one particular case it may only be permissible to make one or two copies, whereas several copies may be made in a different case. The decisive aspect in the last analysis is how many copies are needed to cover one’s individual requirement.

The creators or authors of works have the exclusive right to make their works available to members of the public from places and at times of their choosing (Internet law). 3D design files of copyrighted works that are uploaded to online marketplaces and discussion forums in the public domain, or disseminated via file sharing systems are included in that law. Providing links to content is not deemed to be making something publicly available, in contrast, because it is not the link that makes the work publicly available, but the person who puts the work on the Internet. RSS feeds are not affected, either, because these are push rather than download services.

3. OUTLOOK

When engaging in 3D printing, a consumer departs from his or her traditional role to become a Homo Fabber. Consumers become producers of goods and customise goods to satisfy their own wishes. They do not come into conflict with statutory IPRs and copyright as long as they make 3D products only for themselves or friends and relatives. However, if one-person factories start to multiply, this may well have impacts on the sales revenues of the conventional consumer goods industry. There would then be a risk that the 'old industries', anxious to preserve their markets, cry out to lawmakers to help protect their traditional business models, just like publishing houses or the music industry in recent years. There is therefore cause for concern that either industrial property rights and copyrights may no longer be freely used to satisfy individual needs directly, specifically domestic needs, or that the use of 3D printers in FabLabs or 3D print shops will be prohibited, in other words that shared use of 3D printers will be rendered impossible. In order to produce increasingly sophisticated 3D models himself or herself, Homo Fabber must therefore keep in mind not only technical trends, but also the applicable legislation, if a court judge shall not become the production manager of his or her basement hobby room.