BILETA

16th BILETA Annual Conference

April 9th - 10th, 2001.
University of Edinburgh, Scotland.

The Reflexive Relationship between Computer Games Technology and the Law.

JAMES TUNNEY
(Dundee Business School, University of Abertay, UK)

Computer Games Technology (CGT) is an important phenomenon in the evolution of the relationship between Communications Technology (CT) and the law. CGT is reflexively linked with the evolution of law. Thus (for example) the development of CGT is conditioned, and will continue to be affected, by the evolution of law and legal principles. The legal domains of Intellectual Property (IP) and competition law are obviously particularly relevant. This paper will trace the legal trajectory of CGT as a useful, indicative example of the arguments about the nature of CT law. However, it must also be remembered that the relationship between CGT and the law is a reflexive one, such that CGT could also, actually and potentially, affect the evolution of law itself, particularly in relation to the general operation of legal systems.

Accordingly, this paper will examine the potential applications of CGT to legal systems. It will assess how CGT is, and could be, used in legal education, and also perhaps in the training of other personnel in legal systems. CGT could be used by designers in the legal domain. The paper will examine the potential use of such technology in relation to the promotion of understanding of the dynamics and operation of law and legal systems among the wider world. This might be particularly relevant to ordinary citizens in the context of enhancing public access to law in a deep and meaningful way. In doing so it will contrast CGT against existing, often flawed attempts to harness CT to the ends of legal education. It will argue that the thrust hitherto may have been unduly influenced by the preponderance of a mechanistic mindset within the legal establishment, which often ignores certain cognitive and creative dimensions to human perception, interpretation and comprehension. This is in itself a barrier to public access to law.

Computer Games and the Law

Pervasive and familiar

Computer games are now ubiquitous and familiar. They are relatively novel, yet pervasive. They are pervasive due to the economics of mass-market distribution. The logic of having (at least) one

consumer durable in every household, which used to be interpreted as a political statement, is rather more a statement of basic economic principle. Gates commented on this in relation to the P.C.[1] It is like the more enlightened mayor of a US city, who when many could not see the opportunities of the telephone, could see the day when every city would have one! What would they have thought of mobile telephony? Computer games are also familiar. Most parents in the western world will be familiar with them as will children and both may play them.

Unique?

Whether they are unique or not is a vexed academic question. To some extent it is undeniable that they are unique, in that they have distinctive, recognisable qualities and features. On the other hand, they may be classified by some as merely composites of other existing things. This issue of whether they are unique or not, will have a bearing not merely in academic discourse on aesthetics, for example, but also for law. It has been argued that conceptually they are merely minor developments of existing media and explicable in existing terms. Furthermore, the phenomenon of convergence will probably render any claim to uniqueness redundant with the passage of time. On the other hand, the success of the computer games industry as a commercial force is strong evidence to the contrary. In addition there seems to be a unique combination of characteristics associated with computer games, in their present stage of development which may make them conceptually unique, with whatever consequences that implies.

Characteristics

Accepting that it may be contested in some contexts whether computer games are unique, such an argument would be based on the distinctive combination of characteristics that computer games exhibit. That they are games is not significant in most cases, but is relevant to distinguish them from other similar media such as virtual reality and simulation contexts. They may (or may not) share some characteristics with virtual reality such as a lack of narrative, in certain cases. Games and gaming have multifarious and almost infinite permutations. However when combined and contextualised with or in electronic and digital media, the synergy seems to create a rather different force. Computer games are interactive. They enlist the player in an active way, and may demand a participation which is arguably greater than other types of games. The player may increasingly be immersed in an artificial, pseudo-environment or world. The choices available may make that world a very credible one. The opportunity to repeat and enhance the experience or achievement is also relatively unique as is the possibility of learning from the immediate feedback loop between action and performance. Associated with the opportunity to repeat is a kind of chirality, where the player can proceed to higher levels. This progressive feature is an important benefit of CGT.

But other media involve these elements, or will increasingly involve them. Indeed film has a reflexive relationship with computer games technology. Certain recent films such as *The Matrix* integrate idioms which computer games-associated reality have engendered. If forced to choose the most distinctive feature which would survive a filter of comparison with diverse media, it is submitted that it is the feature of responsive interactivity which would remain. Immediately the counter-argument would arise of the generally increasingly interactive nature of digital technology.

That is undeniable. However, then the fact of its game nature and that the key feature is that it is a game becomes the distinguishing characteristic. Why people play games is well known, studied and is generally appreciable. It is worth remembering that Marshall McLuhan, addressed the phenomenon of games in his celebrated work *Understanding Media.* In his chapter on games he concluded quite provocatively,[2]

That games are extensions, not of our private but of our social selves, and that they are media of communication, should now be plain. If finally we ask, " Are games mass media? the answer has to be "Yes". Games are situations contrived to permit simultaneous participation of many people in

some significant pattern of their own corporate lives.

This may have been prescient in relation to network games in particular.

Computer Games and the Law

Games and gaming have long been regulated by law.[3] But when computers are added into the equation, there is obviously no direct, historical trajectory. How law has coped with their regulation, is obviously a recent story. That a huge industry has been spawned on the back of them may be enough justification for analysing them separately, if not differently. This argument links into existing discourse as to whether CT requires special legal regulation or indeed *sui generis* regulation. Again, the answer to this question may depend on whether one conceives computer games themselves as unique or not. If there are no unique features associated with them, then it may follow that there is no call for unique legal regulation, consistent with that argument in the literature. Alternatively, it may take the interaction of forces in a legal context to begin to expose unique features which require special attention. Although one might cite the tendency in EU law to make a series of compartments for specific technology i.e. the specific provisions for computer programs, databases, cable and broadcasts and satellite, the fact that EU law has easily fit all these into the copyright compartment corroborates the similarity rationale. There may not be much evidence of legal discord or contest about the legal rationalisation of computer games, although there is certainly some. It is suggested here, that a study of the legal regulation of CGT will also help answer some of the questions about the nature of the technology itself, which other disciplines have grappled with, with limited success.

Protection of Product: Computer Games and Intellectual Property. Three Streams.

The dominant legal discourse has arguably been about computer games and IP, but more particularly about copyright. There have been a number of streams in the context of CGT and IP from the perspective of legal regulation, which should be taken as establishing a pattern rather than explaining in very strict chronological terms what was happening.[4] The first stream involved the articulation of IP protection of computer games as computer programs.[5] It is well established that as computer programs emerged there were various calls for their protection as IP, which eventually happened as they were widely accepted to be treatable as literary works for the purposes of protection within the existing framework.[6] Revealing choices were implicit in such a general option, such as the rejection of the viability of the patent route and the rejection of *sui generis* protection, with the exception of semiconductor topography rights.[7] Computer games therefore received protection as computer programs, and implicitly were not treated as having any really distinctive features apart from the programs, as other programs could contain a complex mixture of elements broadly analogous to CGT.

The second stream involved a more comprehensive application of copyright to CGT, which built on the literary work base. In the post-literary work world, other issues arose such as to how else CGT could be protected. Such issues were significant where the protection afforded by the literary work compartment was exhausted in a particular situation, and there was need of greater. One recurrent question in a number of jurisdictions has been whether a computer game may be classified as a film, audio-visual or cinematographic works for the purposes of copyright law.[8] Despite a fairly universal disposition to do so in industrialised countries, some jurisdictions rather exceptionally took a narrow approach to this issue.[9] The elements and feel of the visual display are protectable, despite player involvement. Copyright in computer games extended to the `sights and sounds' as embodied in the chips, extending to the fanciful design of characters in the game, their distinctive modes of movement and associated sounds.[10] The classification may be important in view of the consequences that will follow. Thus for example if the visual dimension of a computer game is classified as a film, then the relatively complicated duration provisions for film will of course apply.[11] In addition, in the wake of the *Arks* cases, the consequences of classification of a work as a film,

may increasingly open up the possibility of identification of the subsistence of a dramatic work.[12] If this seems far-fetched, it is worth bearing in mind that computer game competitions have transformed into spectator sports. In the second stream, some of the elements of distinctiveness of computer game perhaps were emergent, although often the parallels with films were emphasised.

[131415161718]

b`'

The most striking feature of the three streams of development of copyright in relation to CGT is probably that the all end up in a similar place. The speed at which the judiciaries around the world were called upon to act and the generally similar responses which emerged, are testament to the global nature of the industry. They are also testament to the fairly harmonised international regulation of copyright in particular, and IP in general, with a word of caution which requires that we remember that industry is the primary driver behind the forces of international regulation.

CGT v. Computer Programs
The evolution and application of copyright to computer programs is well documented.[19] After the acceptance of the availability of the copyright compartment for computer programs, the main contours of evolution of the law related to the articulation of the issues associated with the identification of copying in a non-literal context. This was obviously more difficult in relation to the `internal' aspects of a computer program, as compared with the `external' elements. Tests emerged in the United States to help in computer program copying cases.[20] However the moving image that is intrinsic to the computer games, surely rendered programs containing games far easier to protect, because of the inherently non-static nature of the visual display.[21] This was recognised by some writers, but it seems rather imperfectly. In fact some authors believed that there should be *sui generis* for computer-user interfaces because they were inadequately protected under existing law in the United States. However this was generally in response to the difficulty of protecting certain computer-user interfaces, which did not have the unity of movement which computer games inevitably have.[22] This may suggest that computer games have a unity which in its totality is quite different from other things which comprise it, and that the very composition and complexity may create unique legal results.

Other IPRS

Other IPRs will of course be relevant to CGT. Semiconductor topography rights will be available and may be relevant. But more directly, trademarks such as *Nintendo*, *Game Boy* and *Super Mario Brothers* are relevant and well known. Patents will be granted for CGT if the relevant criteria are satisfied, usually for the hardware aspects. Despite general attempts to exclude computer programs from patentability, the general trend has been in favour also of increasing the circumstances of recognition of software patents.[23] The European Patent Office started the inclusion of computer programs, when it accepted that they could create `technical effects' beyond the program as such. The EU is assessing the patentability of computer programs in order to harmonise the law with the US and Japan. The Patent Office in the UK has been engaged in a consultation process on the issue. Things held to be patentable-improved screen display in a business management system and a protective system for foreign currency transactions. Patent protection protects irrespective of whether there has been copying.

Areas beyond IP

Computer games have posed difficult issues in other context such as how they fit into the Video Recordings Act 1984. Issues such as this revolve around the arguably unique nature of computer

games. The experiencing of difficulties in such areas enhances the argument that computer games are indeed unique and although hybrids of other technologies, they are *sui generis* technology, that might benefit from *sui generis* legal regulation. One clearly growth area in the future will be that of competition law. The European Commission is engaged in investigations in the computer games industry at the moment. Some of the issues which emerge in the cases are rather better dealt with by a competition or antitrust perspective, than solely by an IP one.

Law, Legal Systems and Computer Games

CT and the Lost Opportunity

However it would be a mistake to merely look at the legal regulation of computer games as a practitioner might without looking at it the other way around. A reflexive approach would suggest that it is also important to remember that significant forces might also have an effect on the legal system itself. Perhaps it should not be overstated, but there is a clear opportunity for computer games to play a role particularly in legal education, in the widest sense.

It is generally accepted that publication of the law is crucial in its operation. That the Codes of Hammurabi in the times of the Babylonians and the Twelve Tables in the times of the Romans were published in public places is testament to this imperative of ancient pedigree. However, publication presupposes or implies some degree of comprehensibility and indeed actual comprehension, as a public policy goal necessary for the optimum functioning of the law and for its public legitimacy. Notwithstanding the principle that ignorance of the law is no excuse, it cannot be in the interests of anyone other than the legal profession, that the majority of law be opaque, difficult, complex, inaccessible and thus in need of mediation. It has generally been assumed that CT assists in the dissemination of information and knowledge, and may play a powerful empowering role. This benefit has been assumed generally to easily translate readily into the legal sphere.

It might be suggested however that CT in law has been a phantom dawn. It is difficult yet to see huge benefits to the operation of legal systems in general beyond the mere benefits of enhanced access and storage of information and greater communicative possibilities. There has been no real, receptive paradigm calculated to address existing systemic problems.[24] CT is almost expected to operate without great agency to yield stunning benefits. But if viewed solely against the goal of access, all but the lowest hanging fruit is available. Information deficits persist.

One real test of the sophistication of reception of CT into the legal system is in relation to legal education, whether considered in a wide sense (i.e. public education) or in a narrow sense (i.e. the legal establishment). It is submitted that there has been no `killer application' of CT in legal education. Rather the failure to make great use really reflects the true, underlying problem of a significant degree of inertia mainly as a result of undue control by the professional bodies of the academic sphere in law. It seems that the initial use of CT for learning law, reflecting flawed pedagogical approaches such as rote-learning for example. There is little evidence that legal education embarked on any new departure as the new potential emerged. There are hopeful signs. CT was used for example to facilitate interactive and participation in simulated real world scenarios. [25] Although it is suggested that use is far from optimum. Likewise in relation to wider public education, there is little product, although `DIY' law in the USA might be noted.

Computer Games and Legal Education

CGT. Emerging or Not?

CGT could obviously be used to further the key goal of enhancing legal education in both the wide and narrow sense. Games and legal education, already have a long connection, whether from mooting, through CT based work, or conceptually as games theory and law is increasingly being

explored. Indeed we may expect that games theory in general will be increasingly applied to law.[26] CGT is used already, so it is not difficult to anticipate how it could be applied. Bearing in mind existing demands and demand or potential commercial applications, it is submitted that market forces will deliver these. That may seem like a very market-dependent view, but it rather is a testament to the failure of the existing providers of legal services and education to provide solutions. It is clear that there is a huge market for legal services, and for legal education as well as a related and overlapping public education and consumer empowerment market. Obviously the benefits of computer games are that they should be exciting and stimulating, they should allow repetition and successive learning, and they should enhance visualisation and comprehension of complex circumstances.

There have been arguably few CT applications, never mind CGT applications. There are a number of reasons why CGT might not readily flow from the existing legal establishment. One of the main ones may be the profile of the legal establishment, and in particular the domination of regressive or mechanistic elements. It may not have encouraged values of imagination or creativity, which are essential attributes in creating a culture which would easily yield the translation of complex legal ideas into dramatic format necessary for effective CGT to emerge.[27] A further hindrance to the reception or advent of CGT in legal education contexts may be a cultural one. The idea of associating enjoyment with legal education may encounter hostility. It may be that it seems to trivialise the work that law involves. This is in spite of mass-market evidence that the public is fascinated with law.[28] Furthermore, the persistence and ubiquity of `First Person Shooter'-type idiom, may put off a legal establishment which is both conservative and inert.

CGT Applications in Legal Education in a Wide and Narrow Sense

General

One of the great failures of legal education and of the mechanistic and `black-letter' law type of instruction, is the tendency to present law as a dull machine, operating in accordance with preordained principles. Instead it could be presented as the exciting medium it can be, which mediates between competing forces in a dynamic and dramatic way. The game element would be used to engage the person or persons in a way calculated to present them with the choices and considerations they may face and the consequences that may flow from their decisions. It does suggest that there are finite optimum possibilities and also the possibility of breakdown and failure. All these are real world scenarios. The game element would go beyond virtual and simulated experiences in that it would force the player or user to engage and probably re-engage to enhance their ability and learn from their mistakes. The danger with merely passive visualisation would be that the dynamic and drama of real world scenarios may be ignored by systems which project undue comprehension on the player. Games which entice the player to participate, do so by challenging the player in a way which they respond to. This reflects the reality that genuine educational struggles are with oneself. In addition, on a practical level, it should also be mentioned that games do not have to possess a quantitative scoring element. Scoring is merely a cipher. This feature may obscure for some that fact that real progress can be made in relation to skills development. Otherwise their use by pilots and medical trainers would not have occurred. Mastery and progression is a useful description of modular learning methodology. On a pedagogic level, the value of learning through playing is well established.

At a deeper theoretical level, particularly at a judicial, policy level or a pre-legislative level the element of complex choices and alternatives emerges. This perhaps has been explored most satisfactorily by some of the American Realist school of jurisprudence. Indeed Oliver Wendell Holmes seems to stand the test of time here. The danger is that a priesthood emerges which can supply products which are vaguely about legal issues, but which actually engage with them in a counter-productive, negative or destructive way. The addition of a mechanistic component upon a problem which arguably derives from a mechanistic base, could exacerbate existing problems.

However, accepting that judges for example have indicated the utility of sophisticated visual depiction and representation in complex cases such as patents, then it is likely that they would also appreciate models and games which allow them explore the imagined consequences of decisions. As decision-making is increasingly explored and games theory is applied to reveal likely contours of fallibility, systems which demonstrate fallible thought processes in complex decision-making would surely be a welcome addition to judicial discretion. This may be superior to choosing systems, which seek to use artificial intelligence, and seek to replace fallible human discretion with fallible technological certainty. Thus principles such as the `regression to the mean' and `failure of invariance' might be depicted and available as part of an armoury of decision support systems in policy choices that are presented in judicial contexts.[29]

Finally, games may be useful in the construct of holistic pictures. It will be increasingly accepted that legal systems in western, liberal democracies suffer from systems-failures such as undue expense, delay, exclusion and persistent miscarriages of justice (to name but a few), and that these system-failures in part derive from a failure of training. Part of the contributory mechanistic and reductionist mindset and failure to understand systems *qua* systems, requires countervailing theories and devices (such as CGT) to help combat the problem. In a different but perhaps analogous context, Davies, talking about physics states the following,

Physics, in my opinion, makes its chief contribution through reductionism. The holistic aspects fall more appropriately into the cognitive sciences and subjects like systems theory, games theory, sociology and politics. That is not to claim that physics has nothing to say about holism, for it clearly does.[30]

A recent article by Schwintowksi, in exploring `an economic theory of law' refers to the relevance of the work of Kirschner and also of Dörner.[31] Kirschner deals with the context of making decisions in a state of uncertainty and the need to predict the decisions and the consequences as well as considering the changes wrought thereby. Predictive rational behaviour needs to be used to approach reality, as jurists such as Oliver Wendell Holmes imply. Dietrich Dörner, a theorist in cognitive psychology did experiments `to determine the features of human planning and decision making in complex situations.'[32] He advocated the use of computer controlled simulation games, because reality should not be the place to learn from mistakes. As Schwinstowki writes,

Time elapses quickly in a computer simulated system. The computer simulated system is a time compressor. The confrontation with such a system quickly reveals trivial mistakes. A simulation system for side effects and the future consequences of plans and decisions brings result to light quickly. Errors can be corrected. Based on this concept, new institutional economic should carry out computer generated planning games for analysing relational contracts or principal-agent situations and use them to develop decisions based on prediction reflecting what would be rational behaviour. We have a predisposition to learn through play, we have but only to use it.

Particular

Although it is hoped that we never have to endure `*Killer Zombie Conveyancer*,' that may not be the case, and the following scenarios are all assumed to be generally positive ones.[33] It is suggested that they might be used in the following ways, all linked by the quality of having simulated environments, with the game element, so that the factors which may arise in particular circumstance must be dealt with in a comprehensive way.

(a) The provision of games which involve situations associated with basic legal

scenarios, calculated to allow the users or players to appreciate the practical operation of legal concepts, including a deep understanding of their rationale. These could be used in countries which have constitutions to educate the citizen of their provisions. They might be used to educate

consumers in consumer contexts. The imperative on all signatory nations to educate citizens of the Universal Declaration of Human Rights may be better satisfied by a compulsive game, perhaps using licensed popular characters. The emergent D-I-Y legal products market is going in that direction.

(b) The provision of independently-produced, context-based games for individual to visualise what the consequences of their decisions might be in particular circumstances.

(c) The provision of games which involve complex situations for students who are learning law, in both individual and group contexts. These would be at a higher level than the basic ones. This is where the market is being supplied already.[34]

(d) The provision of games which allow legislators and judges to comprehend, predict and better anticipate the consequences of their decisions in complex scenarios, such as in competition or environmental contexts. These could range from basic to complex choice representations, incorporating some of the lessons from games theory in rational choice making.

Sample.

What might an integrated game look like? The following is an illustrative example.

The EU needs to inform people about Europe, as well as indicate how it works. As a result they might partly fund a proposal designed to produce a mass-market education product calculated to be useful on all levels. The market for the product is good, as visual depictions can operate across a range of language barriers. Accordingly this is a description of the hypothetical game.

Free Movement: The Game

This is a game which uses EU law regarding free movement as the basis of the game. It can be played by a single player or in groups. Different levels will be relevant to different groups. It is intended to supply levels from beginner to the `supreme levels' which judges could actually use. The object of the game is to get goods, services, people or capital moved across the EU. Obstacles will be encountered, sometimes genuine, sometimes illegitimate. Information will be supplied to help make decisions at particular stages. Scenarios will include real cases. The game will be predominantly a visual one. At the lower level, the game will be particularly spectacular, and will be designed to `hook' younger player and indeed non-lawyers. The game could have single or multiple players. It is intended to avoid the mention of law, unduly, such that the negative and dull resonance associated with law are avoided. The mid and higher levels of the games are extremely expensive and will only be sold to specialist legal publishers. Icons will appear which indicate the relevant rules as appropriate. Nevertheless all elements of the market, albeit an educational one is attended. The whole of the EU, prospective members and other regional bodies such as MERCOSUR, and ECOWAS are also potential purchasers. At the higher levels, there are attempted representations based on very fine decision making in accordance with particular objectives. It is a game of skill at all levels, based on strategic decision- making, which is informed by rules and visual representation. Of course, it also involves chance and randomness, reflecting real-world, realpolitik and history. Thus it combines the best of games of skill and games of chance.

Conclusion

That the legal establishment have got it wrong is fairly unsurprising. Funnily enough, blame does not seem to rest with the judiciary, who while often assumed to be regressive and conservative, are probably more aware of the need to change than many observers. The lethargy, inertia and lack of critical thinking which has permeated a fair degree of the legal academy in these Isles for the last few decades is clear. Indeed until there is some reform in that context, it is unlikely that there will be many general solutions from there. CGT is ideal for legal education in the widest sense for general

and particular purposes. Its advent is inevitable. That many of the legal academy will be left out is also inevitable. Hopefully, this advent could have practical benefits for the legal system which is experiencing major flaws in western, liberal democracies. In turn, there will be an evolution of legal response to CGT and how it is regulated, that may be interesting.

An appreciation of the reflexive relationship between CGT and law might suggest that the judicial and legislative approach to CGT as it evolves, will assist in identifying any peculiarities of CGT which renders it susceptible to a *sui generis* approach. Likewise the greater study and application of CGT to the operations of the legal establishment will inevitably lead to a greater appreciation of any distinctive characteristics, which in turn will inform the evolving jurisprudence.

---

[1] See Gates, *The Road Ahead, Viking*, London, 1995.

[2] McLuhan, *Understanding Media; The Extensions of Man*, Sphere, London, 1964, p. 261.

[3] For example the common law has regulated gaming contracts.

[4] Indeed some of the early thinking about wider copyright protection for computer games will have derived from uncertainty existing before the phase of establishment of protection of computer programs as literary works.

[5] See *Namco Inc. v. Nishi Nihon Sales Co.* Osaka District Court, 18. Dec. 1979 noted at [1981] 3 EIPR-D 61 and *Taito Corporation v ING Enterprises, Atari Inc. & Bertolino v. Sidam Srl*, 17, Oct 1983, see Case Comment [1983] 12 EIPR 347, *Taito Inc. v. Makoto Electronics Industries Inc*. Yokohama District Court, 30 March 1983, [1983] 6 EIPR D-138.

[6] Building on cases such as *Williams Electronics Inc. v Artic International Inc.* (1982) 685 F.2d 870.

[7] Such as for example the Design Right (Semiconductor Topographies) Regulations.1989 (SI 1989, No.1100)

[8] See *Stern Electronic Inc. v. Harold Kaufman* [1981] 8 EIPR, D-173, *Stern Electronics Inc. v. Kaufman*, 669 F.2d. 852 (2d Cir. 1982) or [1982] 7 EIPR, D-155*, Midway Manufacturibg Co v. Artic International Inc* (1983) 704 F.2d 1009, *Namco Inc. v Jackson Inc. & Soto Electronics Industries Inc,* Tokyo District Court, 24 May 1982, [1983] 2 EIPR, D-46*, K.K. Namco v Suishin Koygo K.K,* Tokyo District Court 28 September 1984, [1984] 10 EIPR, D-226, *Atari Games Corporation v Ralph Oman*, 31 October 1989 [1990] 6 EIPR, D-115, see [1992] 9 EIPR, D-176 on a case from the District High Court in Cologne, see [1993] 5 EIPR D-105 for a decision of the District High Court, Frankfurt am Main*, K.K. Namco v. K.K. Gijutsu Hyoronsha*, Tokyo District Court, 31 January 1994, [1994] 8 EIPR, D-202, *Nintendo Co. Ltd v Golden China TV Game*, Supreme Court of South Africa, [1994] 1 EIPR, D-11, Golden China TV Game v. Nintendo Co.Ltd, Appellate Division of the Supreme Court, September 25, 1996, [1997] EIPR 1 EIPR, D-20, Galaxy Electronics Pty Ltd v Sega Enterprises, [1997-8] Info T.L.R 203.

[9] See [1984] 3 EIPR, D-53.

[10]*Midway Mfg Co. v, Arctic International Inc*, 10 March 1982 [1982] 11 EIPR, D-252.

[11] The provisions of the Term Directive as implemented in the UK...

[12]*Norowzian v Arks ltd*, [2000] Fleet Street Reports, 371.

[13] See *Artic International Inc. v. Midway Mfg Co*, Supreme Court, October 1983, [1984] 1 EIPR, D-24. *Atari Inc. v. Amusement Word Inc*. (Maryland District Court) 27 November 1981, [1982] 3 EIPR D-71.

[14] See for example *Lewis Galoob Toys Inc. v Nintendo of America Inc* 964 F.2d. 965, 22 USPQ2d 1857 (9th Circuit). noted by Glick and Page, [1992] 1 EIPR 24.

[15]*Nintendo Co. Ltd v. Centronics Systems Pty. Ltd.* Federal Court of Australia, see [1992] 4 EIPR, D-61.

[16] See *Sega Enterprises Ltd v Accolade Inc*. Court of Appeals, Ninth Circuit noted at [1993] 2 EIPR, D-41.

[17]*Micro Star v. FormGen Inc*, 154 F.3d 1107 (9th Cir, 1998) noted in [1999] EIPR, N-95.

[18]*Ahn v. Midway Manufacturing C*o, DCNIII, No.95 C 719, 5/28/97 was a failed attempt by the models for the characters in the arcade games *Mortal Kombat* for violation of their rights of publicity. But they had signed away their rights. They were video taped and this was digitised. The makers used the images in home video and computer games and hand held versions. *Communications Law Vol, 4, No. 4, 1999* at 155.

[19] See for example Bainbridge, *Introduction to Computer Law*, Longman, 4th ed. 2000.

[20] See *Computer Associates v Altai*, 982 F.2d 692 (2nd Cir. 1992), which established the `abstraction-filtration-comparison test,' following on from the celebrated case of *Whelan Assocs. Inc. v Jaslow Dental Lab*. 797 F.2d, 1222 (3d Cir.1986).

[21] See for example Hamilton and Sabety, "Computer Science Concepts in Copyright Cases: The Path to a Coherent Law," (1997) *Harv. J.Law &Tec*. 230.

[22] See for example *Lotus v Borland*, 49 F.3.d 807 (Ist Cir. 1995), and *MiTek Holdings, Inc., v Arce Engineering,* 49 F.3d, 1548 (11th. Cir. 1996).

[23] See for example Section 1(2) (c) of the Patents Act 1977 in relation to the exclusion of computer programs.

[24] See Tunney, "Notes on the Reflexive Role of Cyberspace," International Review of Computers, Technology and the Law, [2000] Vol.14, No.2.

[25] See the ongoing work of Maharg in particular, some of which has been presented at previous Bileta Conferences and specifically Aikenhead, Williams & Hunter, "Teaching Law to the Nintendo Generation," Bileta 2000.

[26] Applying some of the insights that emerged from the literature commencing with the celebrated work Von Neumann and Morgenstern, *Theory of Games and Economic Behaviour, Princeton, Princeton University Press*, 1944.

[27] See Tunney, `The Problematic Role of Lawyers in the Creativity and Innovation Process,' *Journal of Creativity and Innovation Management*. Forthcoming.

[28] As revealed by the persistence of law based dramas in the best-selling film lists and popular novels.

[29] For a simple exposition, see Bernstein, *Against the Gods: The Remarkable Story of Risk*, John Wiley, New York and in particular Tversky and Koehler, "Support Theory: A Nonextensional Representation of Subjective Probability," 1994, *Psychological Review,* Vol.101, No.4, pp 547-567 and Tversky and Kahneman, " 1986, "Rational Choice and the Framing of Decisions," *Journal of Business,* Vol. 59. No.4, pp-278.

[30] See Davies, *God and the New Physics*, Penguin, London, 1983, p. 226. Davies made this statement after discussing Conway's (a Cambridge mathematician's) scheme and game called *Life*.

[31] See Schwinstowksi, "An Economic Theory of Law, *The Journal of Interdisciplinary Economics*, Vol.12, No. 1 (2000), p.1.

[32] Kirchner in "Regulierung durch öffentliches Recht und/oder Privatrecht aus der Sicht der ökonomischen Theorie des Rechts," (Regulation by Public and/or Private Law from the perspective of an Economic Theory of Law), in Hoffman-Riem/Schmist-Afsmann (eds) Offentliches Recht and Privatrecht als Auffabgordungen, Schriften zur Reform des Verwaltungsrechts (*Public Law and Private Law as Controvertible Collective Law*, *Essays on Reform of Administrative Law*), Vol,3 1996, p.73. Dörner, *The Logic of Failure*, Rowolt-Verlag, 1989.

[33] To the best of my knowledge, no such game thankfully exists (yet).

[34] Such as HYPO, MEDIATOR, JURISDICTION and PERSUADER.