Case No: A1/2003/0747

Neutral Citation No: [2004] EWCA Civ 380
IN THE SUPREME COURT OF JUDICATURE
COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE HIGH COURT OF JUSTICE
CHANCERY DIVISION (HIS HONOUR JUDGE THORNTON QC)

Royal Courts of Justice
Strand, London, WC2A 2LL

Thursday 1 April 2004

Before :

LORD JUSTICE WARD
LORD JUSTICE POTTER
and
LORD JUSTICE CLARKE

- -

Between :

CYPROTEX DISCOVERY LTD	**Appellant**
- and -	
THE UNIVERSITY OF SHEFFIELD	**Respondent**

- -
- -

Mr Iain Purvis (instructed by **Messrs Addleshaw Goddard**) for the appellant
Mr Antony Watson QC (instructed by **Messrs Keeble Hawson**) for the respondent

Hearing date : 13 November 2003

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JUDGMENT

Lord Justice Potter:

Introduction

1. This appeal by Cyprotex Discovery Ltd ("Cyprotex") from a decision of His Honour Judge Anthony Thornton QC concerns the ownership of copyright in a set of computer programs arising out of research ("The Simcyp Project") carried out at the University of Sheffield ("Sheffield") by its Department of Clinical Pharmacology and subsequently developed into a potentially commercially exploitable form by Dr Edwards, an employee of Cyprotex. The background is complicated but the appeal turns upon a question of contractual construction.

2. There is no dispute between the parties that the computer programs are "literary works" protected by copyright under the provisions of the Copyright Designs and Patents Act 1988. Nor is there any dispute that, under the provisions of that Act, Dr Edwards was the sole author of the copyright works and that they were created in the course of his employment. It was thus accepted by Sheffield at trial that, in the absence of agreement to the contrary, Cyprotex would be owners of the copyright. The issue turned upon the proper construction of the contractual arrangements existing between the parties and, in particular, upon the terms of a Research Agreement between Sheffield and a number of sponsors of the Simcyp Project pursuant to which the later stages of the development work was done. Cyprotex was one of those sponsors.

3. At trial, Sheffield relied on the existence of an 'informal' oral agreement between the parties prior to the completion of the Research Agreement under which it was claimed that Cyprotex had agreed that copyright should be vested in Sheffield. The judge rejected that argument on the grounds that the Research Agreement was expressed to supersede all previous agreements and to cover all work relating to its subject matter, namely the development of a package of software. However, he found in favour of Sheffield on the basis of his construction of the Research Agreement (and in particular of clause 9) against the relevant contractual background.

4. Before turning to the Research Agreement however, it is necessary to recount the factual background.

The factual background

5. The Simcyp Project, so named in the late 1990's by Professor Tucker of Sheffield, was concerned with pioneering a computer-based aid to assist research and development in the pharmaceutical industry by seeking to predict how a potential new drug would be absorbed across the gut wall and other barriers within the body, distributed to the various organs and tissues and eliminated from the body by excretion and metabolism. The Simcyp Project was described by Professor Tucker as "a set of algorithms, databases and associated computer software designed to simulate and predict the handling of drugs and their effects in human populations".

6. Professor Tucker was assisted in his work by Dr Amin Rostami. They produced a series of algorithms by drawing together published knowledge on the mechanics of the metabolisation of drugs and the important variants which affect such metabolisation in different human populations to create equations which, in theory, could be combined with the databases of pharmokinetic data to make valuable predictions as to interactions between drugs within the body. There is no dispute that the equations or algorithms created by Professor Tucker, Dr Rostami and their colleagues and the rights in any databases of pharmokinetic information created by Sheffield belong to Sheffield.

7. The next step was to create a mechanism whereby a user could benefit from the equations and algorithms by applying them to simulate the effect of a combination of particular drugs in the body. Before Dr Edwards' involvement, Sheffield had developed its algorithms in respect of two specific drugs, Methodone and Ritonvir, in the form of MathCAD worksheets. MathCAD is a mathematical modelling system used for the development and testing of numerical models at a research level. A MathCAD program is a collection of mathematical equations but, not being tied to or based on any single physical software product, it was unsuitable for general commercial use by third parties. Sheffield wished to take the project beyond its limited MathCAD incarnation and to develop the Simcyp algorithms and databases from their worksheets into a program with a user-friendly and widely usable operating environment such as Windows. Development of such a program required finance since it would need skilled programming expertise and the development of additional databases.

8. Sheffield decided to raise the finance for this next step from drug companies who would each sponsor the development by subscribing a pre-determined share of the projected cost. The development of the program was to proceed in two phases. The first phase would involve the production of a user-friendly program using a retained programmer. The sponsors would have rights to evaluate the program and suggest changes during this development phase. The second phase would involve the development of databases required by the program which would then be available for commercial marketing. The sponsors who would have obtained input into the program's facilities would then be granted licences on favourable terms to use the program following its successful development.

9. Cyprotex was a company formed in May 2001 devoted to the development of computer programs for use in drug behaviour predictions and test trial simulations. Professor Tucker was on its Scientific Advisory Board and, as a result of this contact, Cyprotex entered into an arrangement with Sheffield to provide the necessary computer programming expertise. Payment was to be made in large part by Cyprotex being offered sponsorship rights to the project which would enable it to obtain a valuable licence to use the program on favourable terms. The programmer who undertook the programming work was Dr Edwards.

10. The sponsors provided their share of the development costs through the multi-party Research Agreement to which each sponsor and Sheffield were parties. The Programme of Work and the intellectual property rights in respect of the work done

under it were provided and defined under the Research Agreement. Dr Edwards started his work in June 2000 well before the (undated) Research Agreement took effect. However, nothing turns on that; it is agreed that the Research Agreement governs the issue between the parties. Dr Edwards produced a first full version of the program by March 2001 and, following agreement with Dr Rostami as to new requirements and the production of a new specification, he started work on a second full version.

11. Unhappily, while he was doing so, a dispute developed between Sheffield and Cyprotex until their commercial relationship ultimately broke down. In the summer of 2001, Cyprotex initiated negotiations relating to the commercial exploitation of Simcyp and its wish to acquire from Sheffield the rights in Simcyp which it did not then own. During those negotiations, it became clear that Sheffield was maintaining that it held the copyright in the Simcyp programs developed and being developed by Dr Edwards, in part by relying on provisions in the Research Agreement, so that any separate use or licensing of Simcyp by Cyprotex would amount to an infringement of Sheffield's copyright. Cyprotex, on the other hand, maintained that it had exclusive rights over Dr Edwards' development and programming work. Sheffield formed a company called Simcyp Ltd with the aim of using it to market and exploit the Simcyp algorithms, software and databases. This company asserted that Sheffield owned the copyright and the software being developed by Dr Edwards. Cyprotex denied this and made equal and competing assertions as to the ownership of the copyright. In September 2001 Dr Edwards was instructed by Cyprotex to cease the development work. There the matter has remained, neither party having formally terminated the Research Agreement, either pursuant to its terms or by asserting or accepting the repudiation by the other party.

The claims of the parties

12. The computer programs created by Dr Edwards fell into two parts, called the Java Class Libraries and the Graphical User Interface programs.

13. Following the breakdown of negotiations, Cyprotex started these proceedings claiming a declaration that it was the owner of all copyright and rights of exploitation in the Java Class Libraries and Graphical User Interface programs, Sheffield claimed by counterclaim a declaration that it was the owner of the rights "to or over all and any works relating to SimCyp created by Duncan Edwards".

The Judge's order

14. In the light of the matters canvassed before him, the judge granted Sheffield a declaration in terms as follows:

> "The copyright and any other intellectual property:

(1) in or over and any works relating to Simcyp created by Dr Edwards or any other servant or agent of Cyprotex Discovery Ltd or Medeval Ltd; and

(2) in or over MathCAD and any algorithm or database used in its compilation; and

(3) in any specification created by or with the assistance of Dr Edwards, Dr Rostami or Professor Tucker relating to Simcyp or MathCAD,

is owned by the University of Sheffield."

15. Two strands of the factual background require elaboration; (a) the contractual background and history including the relationship between Sheffield and Cyprotex and (b) the work of Dr Edwards.

The contractual history

16. In 1999, following presentations by Dr Rostami and his researchers at meetings of the British Pharmacological Society, the interest displayed by pharmaceutical companies prompted Sheffield to formulate a development strategy which would involve a two-phased approach. The first phase was the conversion of the MathCAD-based model into a user-friendly model based on a widely accessible operating system which would turn Simcyp into a commercially exploitable product. That phase was estimated to need up to 12 months of development work. The second phase, estimated to take 6 months, would involve the expansion of Simcyp by the build-up of its database of information so that it would now be a product ready to be marketed.

17. At this point, Cyprotex, which was at that stage a division of Medeval Ltd, were interested in developing a new project, referred to at trial as the Virtual Human, on which one of its employees Dr Leahy had been working, which aimed to provide simulated test predictions for possible new drugs as a means of saving design time and development costs using a suite of mathematical models of the human body. The objectives of the programme had considerable similarities with those of the Simcyp Project.

18. Professor Tucker's department at Sheffield had insufficient resources or funds to take the Simcyp Project forward on its own. It needed to employ a full-time skilled programmer to undertake the necessary programming work to develop the user-friendly program. Professor Tucker realised that the only way to proceed was to attract financial sponsorship from outside bodies interested in the product who would promote and sponsor the necessary outstanding research and development. For that purpose it was clear to him and Dr Rostami that Sheffield needed to raise about £70,000 in cash from sponsors and, in addition, to find a sponsor who would provide a programmer or the salary instead, at an estimated additional cost of £34,000.

19. Dr Rostami and Dr Leahy had discussions with a view to Simcyp providing programming skills acquired from the Virtual Human project to Sheffield in return for some financial return. The judge put it in this way at paragraph 38 of his judgment:

> "As Dr Leahy saw the possibilities, Simcyp could provide programming skills acquired from the Virtual Human Project to Sheffield in return for some financial return. The benefit to Sheffield would be the informed programming assistance from an organisation who had already mastered some of the relevant Java-based problems in working in a similar field. The benefit to Cyprotex would be the use of Simcyp within the Virtual Human Project and the possibility of being able to use the Simcyp database and acquiring marketing rights in Simcyp."

20. Dr Leahy and Professor Tucker agreed that it was necessary and desirable to rewrite the MathCAD program in Java, one reason being that the Java-based program would naturally complement and be compatible with Cyprotex's Virtual Human program. Dr Leahy proposed that Cyprotex should carry out the software development of Simcyp and implement phases 1 and 2 of Sheffield's proposed development.

21. The proposal was contained in a Cyprotex document headed "Software Development and Commercialisation Proposal" with a further heading "To Further Develop and Commercialise the Drug-Drug Interaction Simulation Model Simcyp in collaboration with the University of Sheffield". The description of Simcyp in the proposal included the following:

> "SIMCYP is a name given to a prototype program developed by investigators at the university of Sheffield (Professor Tucker, Dr Rostami and Dr Lennard) … as a prototype program, implemented using a specialist mathematical modelling scripting language, the program can be used by the authors to support their own research but is inaccessible to other academics and industrial scientists who recognise its value but are unfamiliar with the minutiae of the program. There is a strong demand from others for the program to be made available and the principal investigators wish to see this happen also.
>
> There intention is to redevelop the prototype program with a user-friendly GUI that would run under MS Windows operating systems.
>
> The university of Sheffield will soon establish agreements with a small number of major Pharmaceutical companies who will provide the funding to support this redevelopment in return for influence over the design and early access to the program. Under this agreement the university would require an experienced analyst/programmer to design and implement the new version of the program. The work is expected to take up to 18 months with a trial program being provided for evaluation

> at the 6-month point. Further work would then be required to meet the additional requirements identified by the sponsors at that stage and to add in a database of properties for drugs known to be sensitive to drug-drug interaction issues.
>
> Should the program development effort be successful then the University has retained the right to commercialise the software through a third party."

22. The proposal stated that:

> "Cyprotex seeks to carry out the software development, under the direction of the Principal Investigators and to meet the requirements of the Sponsors necessary for the project to be successful."

23. It then set out proposed terms upon which Cyprotex would provide the programmer and the cost arrangements in that respect. It also stated:

> "Cyprotex wishes to negotiate terms by which it can acquire exclusive rights to the commercialisation of Simcyp, beyond the successful completion of the Agreement with the Sponsors."

24. In relation to the detail of the proposal, as discussed, the judge stated at paragraph 40 of his judgment:

> "40.Cyprotex would pay the salary of the additional member of staff that would be required but would share the risks of the development in return for negotiating rights to seek to acquire exclusive rights to the commercialisation of Simcyp once the initial research collaboration with the sponsors had been satisfactorily completed. Sheffield would contribute £25,000 towards Cyprotex's estimated costs of the programmer of £41,150. One particular reason for Cyprotex's offer being expressed in this way was that the Cyprotex Division had no available funds to provide sponsorship money but Dr Leahy, particularly since the management buyout of the Division was imminent, was keen to participate in a project that was particularly complementary to the Virtual Human Project.
>
> 41.It followed that the proposal invited Sheffield to contribute £25,000 towards the cost of employing a programmer for the first 12 months of that programmer's work. Both Dr Leahy and Professor Tucker accepted in their evidence that at some stage they agreed that Cyprotex would be paid £12,500 for providing programming services …"

25. He went on to state:

> 42.This proposal was discussed by Dr Leahy with Dr Roberts of … [Sheffield] … in a telephone conversation on 22 December 1999. Dr Roberts wrote a note on her hard copy of an e-mail she had sent to Dr Leahy on 17 December 1999 which read:
>
> > "JR spoke with David Leahy. Due to difficulty of employing a suitable candidate they would still prefer to be the employer. They have no problem with IP [Intellectual Property] going to Uni. Simply see the project as conversion of IP software to a more marketable format. See the involvement of other parties as feedback from customers to develop the program for their needs. Support they will provide is in kind support. They want first option for an exclusive license to market – with a royalty return."

26. There was a dispute in oral evidence before the judge about the terms, meaning and intent of that conversation. The judge held at paragraph 44 of his judgment that:

> "The words that Dr Roberts attributed to Dr Leahy in her note were clearly accurately paraphrased in that note and, objectively, he must be taken to have stated what the note records of him. That record is to the effect that Cyprotex would agree to Sheffield having or retaining the IP rights, to include copyright, in the Simcyp program once developed by the programmer Cyprotex hoped to employ."

27. The first draft of the Research Agreement setting out the shape of the proposed Simcyp development was sent by Dr Roberts to Dr Leahy on 22 December 1999. It contained the substance of the proposed method of working which did not change thereafter. It also provided for the sums to be made available by the various sponsors who would be joint parties to the agreement. The judge held that it was the common understanding of the parties that:

> "46. Cyprotex would also be a sponsor and would provide a programmer to undertake the necessary programming work to convert the MathCAD program into a user-friendly Windows-based program. The cost of this programmer would be provided partly by Cyprotex, in lieu of providing a sponsor's cash payment to Sheffield, and partly by Sheffield who would pay Cyprotex an agreed sum of £12,500 out of sponsorship money raised from the sponsors other than Cyprotex. Both Professor Tucker and Dr Leahy understood each other's financial constraints, in Sheffield's case that the project could only proceed if about £70,000 in sponsorship money from outside sources plus the services of a programmer at no cost to Sheffield were available and, in Cyprotex's case, that no cash could be made available since Dr Leahy had none at his disposal.

> 47. Although Dr Leahy and Professor Tucker understood that the programme to be written by Cyprotex would be written using Java as the programming language, that was not a pre-requisite of the proposal contained in the draft Research Agreement. It was also understood between these two that the programmer to be supplied by Cyprotex would be the same programmer as would be working on the Virtual Human. The resource of a programmer provided or funded by Cyprotex would constitute its contribution to, and its sponsorship of, the Simcyp Project."

28. In June 2000, although the Research Agreement was not yet signed, it was agreed that Dr Edwards would begin his work in June 2000, it being assumed by Dr Rostami and Professor Tucker on Sheffield's side and by Dr Leahy and Dr Edwards on Cyprotex's side that any work undertaken by Cyprotex would be undertaken as part of its obligation to sponsor the Simcyp Project through the Research Agreement. The draft Research Agreement was amended to provide for a contribution from Cyprotex of £17,000. Although it was not defined how that contribution would be provided, the judge held that it reflected the common understanding of the parties that Cyprotex was providing sponsorship by the provision of a programmer out of its own resources but with a cash contribution from Sheffield of £12,500 and with Cyprotex being treated as having provided sponsorship in kind to the extent of £17,000 under the Research Agreement.

The work of Dr Edwards

29. The project described as 'Simcyp' effectively consisted of three successive stages. First, the project up to 1999 entirely in the hands of Sheffield which had resulted in the MathCAD worksheets and accompanying algorithms and databases developed by Professor Tucker and Dr Rostami. Second, the research program in which Dr Edwards was using the Java programming language to develop the project into a user-friendly form. Third, the description was applied to the product in its anticipated final state at the conclusion of phase 2 of Sheffield's development strategy when it would be ready for commercial application and marketing.

30. Dr Edwards started work on the second stage on 12 June 2000 having been handed disks containing the MathCAD program by Dr Rostami. Each of the two phases he was to carry out involved five logical and progressive steps namely (i) the analysis of Sheffield's requirements and the drafting of the necessary specification; (ii) the design of the software; (iii) the coding of the software in Java; (iv) the deployment of the software as a usable program; and (v) the testing, revising and redeployment of the software as a usable program. Steps (i) and (ii) involved two-way exchanges over an extended period between Dr Edwards and Dr Rostami and Professor Tucker by way of analysis of Sheffield's requirements and the formulation and reformulation of those requirements by Sheffield from the concepts emerging from Dr Edwards' specifications. Dr Edwards undertook his analysis using material obtained from Sheffield including the MathCAD work sheets. Those work sheets were not simply transcribed into the program being developed because they only related to specific

pairs of drugs. In using the work sheets and analysing the differences between them and the proposed program, Dr Edwards developed models which analysed readily available literature and interpretations and assumptions made by him that were drawn from his review of the material and information provided to him. The specification eventually produced was a detailed document which described the underlying scientific, in-vitro, population, trial and use case models being employed and then defined the functional requirements in terms of user and library inputs, outputs, data transformations and user interfaces and the non-functional requirements in terms of design constraints and documentation. It finally provided a list of definitions, acronyms and abbreviations.

31. However, once the specification had been agreed, the software design and coding steps undertaken were all undertaken by Dr Edwards without supervision or input from Sheffield. The design and coding process was undertaken in two phases, corresponding to the two phases of development envisaged by Sheffield initially and by the definition of the Research Programme contained in Appendix 1 of the Research Agreement. He produced the first prototype product, 'Simcyp P1.1.1', followed by revisions on 16 January 2001 and 13 February 2001. That marked the end of phase 1.

32. There was then a meeting of the Simcyp sponsors on 29 March 2001 during which new features for the next version of the software were suggested, of which four were chosen. This required work to prepare a new Software Requirements Specification which was dated 1 August 2001 and a new product release, version 'Simcyp P2.1.1'. When the relationship between Sheffield and Cyprotex broke down and Dr Edwards suspended work on phase 2 of the program, he registered SimcypP2.1.1 as a documented milestone.

33. It has already been noted that the computer programs created by Dr Edwards fell into two parts i.e. the Java Class Libraries and the Graphical User Interface program ("GUI"). The judge accepted the expert evidence on behalf of Sheffield that, so far as the Java programs were concerned:

> "A relatively small but significant or possibly crucial proportion of the Simcyp software code was contained in or derived from the MathCAD software … Within the Java Class Libraries, many of the files were unrelated to MathCAD but some were derived and some were adapted from the original MathCAD codes."

34. However, the GUI was not derived from the MathCAD software.

The Research Agreement

35. The Research Agreement was stated to be made between Sheffield and "The Sponsors" who were five in number, including Cyprotex, and listed in Appendix 2. Appendix 3 set out the individual contribution to be made by each of the various

sponsors which, in the case of Cyprotex was stated to be £17,000 payable “Six months after signature”.

36. The relevant clauses were as follows:

> “2. STATEMENT OF WORK. The University shall perform the "Programme of Research" entitled "SIMCYP - a Windows Based Simulation Program to Assess the Likelihood of Metabolic Drug-Drug Interactions from In-Vitro Data as described in Appendix 1. The University agrees to liaison meetings with the Sponsors as mutually acceptable to provide project progress information.
>
> 3. PRINCIPAL INVESTIGATORS. The research will be conducted by Dr Amin Rostami, Professor Geoff Tucker and Dr Martin Lennard.
>
> 4. PERIOD OF PERFORMANCE. Notwithstanding the date of this agreement, the "Programme of Research" shall be conducted during the continuous period of 12 months starting not later than 1 March 2000 unless otherwise agreed and will be subject to renewal only by mutual agreement of the parties.
>
> 5. PAYMENT AND PRICE. The Sponsors will pay the University the sums as set out against the relevant Sponsor's name in Appendices 3, 4, 5, 6 and 7.
>
> 6. TERMINATION. Each Sponsor may withdraw from this agreement upon sixty days written notice given to the University and the other Sponsors. This agreement may only be terminated by the University upon reasonable notice and as soon as practicable as soon as it has been determined that circumstances beyond its control make continuation of the Programme of Research impossible on the basis contemplated by this agreement. In the event that all Sponsors withdraw from this agreement and it is terminated, the University will be reimbursed for all reasonable costs contemplated by this agreement ... and each Sponsor shall only be responsible for a proportion of such approved costs commensurate with the proportion of that Sponsor's payment of the total project cost as set out in the financial appendices and in any event, no Sponsor shall be liable for such incurred costs in excess of that Sponsor's agreed payment as set out in the financial appendices nor shall the University be entitled to any payment in excess of the total payment in excess of the total project price specified in Article 5 and the financial appendices. …
>
> 7. LIABILITY.
>
> (a) The University will exercise reasonable skill and care to ensure the accuracy of the advice, information and drawings provided in connection with the Programme of Research but the University will not accept any liability whatsoever in respect of any claim or claims arising from the use by the Sponsors or by any third party of any such advice, information or drawings.

(b) The University shall use its best endeavours to ensure that it will not infringe any third party rights in performance of the Programme of Research and the rights granted to the Sponsors herein. ... the University does not accept any responsibility whatsoever for infringement of such rights.

8. SCIENTIFIC PUBLICATION …. Title to and the right to determine the disposition of any copyrights or copyrighted written material first produced or composed in the performance of this research shall remain with the University, provided that the University hereby grants to the Sponsors an irrevocable, royalty-free, paid up, non-exclusive right and licence to reproduce, translate and use all copyright material for its own purposes. The Sponsor has the right to assign such aforesaid rights and licence to its affiliates.

9. INTELLECTUAL PROPERTY RIGHTS

(a) All intellectual property in any form owed or existing at the date of this agreement and used in connection with the Programme of Research ("Background IPR") shall remain the property of the party introducing the same.

(b) "Resulting Intellectual Property" shall mean individually and collectively all inventions, improvements and/or discoveries whether or not patentable or capable of other intellectual property protection which are conceived and/or made by one or more members or other agents of the University acting either on their own or jointly with one or more employees of the Sponsors in performance of the Programme of Research and relating to its objectives.

(c) All rights to Resulting Intellectual Property under the Programme of Research shall belong in the first instance to the University.

(d) Rights to inventions, improvements and/or discoveries, whether or not patentable or capable of other intellectual property protection, relating to the Programme of Research made solely by employees of the Sponsors shall belong to each Sponsor respectively ("Sponsor IPR").

(e) The University hereby grants to each Sponsor a non-exclusive, world-wide, irrevocable, royalty-free licence to use the Resulting Intellectual Property for the purposes of the Sponsors internal research and development in support of the Sponsors own business activities including, but not limited to, dealings with any regulatory authority. The Sponsor has the right to assign or sub-licence such aforesaid rights and licence to its affiliates. To the extent any Sponsor IPR is also requested by a Sponsor to obtain the full benefit of this licence, each Sponsor hereby grants a similar licence to the others as specified in this clause 9(e)

(f) The University shall have the right to grant licences to third parties under the Resulting Intellectual Property provided by the University [to] ensure that the rights of each Sponsor under this Agreement are

fully protected and in any event, any such licence shall not affect the licence granted to Sponsors set out in clause (e) above.

…

13. GENERAL

(a) This agreement and the documents referred to in it form the entire agreement between the parties relating to the subject matter and supersedes all previous agreements (if any) relating to its subject matter.

(b) A waiver by any party of any term or condition of this agreement in one instance shall not be deemed or construed to be a waiver of such term or condition for any similar instance or of any subsequent breach. All rights, remedies, undertakings and obligations herein are cumulative.

(c) This agreement may only be amended by a further written agreement duly signed by or on behalf of each party.

(d) Nothing in this agreement shall create or be deemed to create a partnership or relationship of principal and agent between the parties.

…

Appendix 1

PROGRAMME OF WORK

The programme proposes to create a Windows based user friendly software that uses latest information on in vitro - in vivo extrapolation to predict metabolic drug-drug interactions.

There are a number of techniques (using software equations) which are used to do in vitro - in vivo extrapolation. Our software will include number of these options in a library of models which can be selected and employed by the end user. Sponsors, depending on the level of support, may ask for specific routines of extrapolation (common to their practice) to be included in the library.

University will advertise and recruit a suitable computer programmer with some knowledge of modelling/simulation to produce the software.

The first step in the programming will be to convert prototype of SIMCYP (written in MathCad) to Windows based program. Upon successful completion of the first stage (5-6 months) sponsors will be invited to review the programme and draft their suggestions and include additional features that they would like to incorporate into the software. These will be considered by principal investigators and efforts will be made to incorporate such additional features. However, the proportion of additional features from the list of suggested features will depend on the relative contributions received from each sponsor as well as scientific validity of such features.

> A second review of the software will take place at a later stage (8-10 months) and final comments on improvements/enhancements of specific aspects will be received from the sponsors. The programme will be completed by 12 months and the software at this stage will be considered as the final product. Any additional work on software from that point will depend on reaching an agreement for extension of contract between all (/part of) sponsors and the Univ of Sheffield.
> …"

The decision below

37. The judge held that, given the limited extent to which the software design and coding steps undertaken by Dr Edwards constituted a development of the MathCAD work sheets and that the programs written were written without the supervision or significant input of Sheffield, if the question of copyright in the Simcyp program were to be determined without reference to the Research Agreement or any preceding contract between the parties, Cyprotex would be adjudged to be the owner of that copyright. That finding is not challenged by Sheffield on this appeal.

38. The judge then proceeded to consider the contractual position. He first resolved the issue between the parties as to when the Research Agreement came into effect by holding that, once signed, it was plainly intended to have retrospective effect. He held that the language of the Research Agreement clearly envisaged a timescale which started with the Agreement coming into effect and then continued with the commencement of the programming work on 12 June 2000. Again, that is not in issue.

39. The judge made no detailed findings upon the assertion by Sheffield that the contract governing the IPR was an informal contract entered into by Sheffield and Cyprotex when Cyprotex agreed to supply the programming services of Dr Edwards against payment by Sheffield. Having recited that contention the judge simply stated his conclusion, against which there is again no appeal, that the only contract applicable to the Programme of Work was the formal Research Agreement.

40. The judge then shortly disposed of an issue as to whether the Research Agreement was binding upon Cyprotex, given that it was not in existence as a separate company at the date that Dr Leahy signed the Research Agreement purportedly for and on its behalf. He found that a novation of the Research Agreement occurred because both Dr Leahy and Cyprotex acted on and after 21 March 2001 as if the company were the contracting party with Sheffield, Sheffield impliedly accepting this by its continuing course of dealing with Cyprotex Ltd under the Research Agreement. Again no issue arises in that respect.

41. In turning to the construction of the Research Agreement, the judge rightly observed that it was not happily drafted in several respects. First, it did not cater expressly for the type of sponsorship provided by Cyprotex in that it stated that Cyprotex would

provide £17,000 six months after signing the Research Agreement, whereas the parties were agreed that Cyprotex's sponsorship was to be provided in kind. Second, it was drafted on the basis that Sheffield would employ the programmer needed to undertake the Program of Research, whereas the services were provided by an employee of Cyprotex which was one of the sponsors. Third, the Research Agreement was undated and provided for a start date for the Programme of Research nearly four months earlier than the actual start date.

42. Fourth, the Research Agreement did not cater for the situation which had occurred in which the Period of Performance and the Programme of Research were suspended indefinitely prior to the conclusion of phase 2 but without termination of the Research Agreement by recourse to the contractual termination provisions contained in clause 6 of the Research Agreement. The judge rightly concluded that, in the light of the various infelicities, (and, indeed, on any proper approach to construction) the wording of the Research Agreement should not be construed strictly i.e. without reference to its underlying factual basis and commercial purpose: see *ICS v West Bromwich Building Society* [1998] 1 WLR 896.

43. The judge approached the agreement on the basis of the following findings and assumptions as to the relevant contractual circumstances. He said:

> "116. Both Sheffield and Cyprotex were very keen to develop Sheffield's MathCAD-based program. … using algorithms and data bases developed by Sheffield. Cyprotex wished to become involved in the Simcyp Program for two inter-related reasons: to assist it in its development of its Virtual Human project and so as to provide a means of securing valuable commercial rights from Sheffield to market Simcyp once it had been fully developed. Sheffield wished to develop the Simcyp Project for two reasons: to take forward its pet ten-year pharmacokinetics project which had already earned international renown and to obtain valuable revenue from a potentially successful commercial exploitation of that Simcyp Project. The problem for both parties was that each lacked necessary readily-available finance. Sheffield could only proceed with outside financial sponsorship and Cyprotex had no readily available finance at all. However, both of these parties accepted that if other sponsors could be found, Cyprotex could sponsor the project by providing the necessary programmer and programming skills. This resource was particularly attractive to Sheffield given Cyprotex's obvious experience and expertise in the particular specialised programming that would be required.
>
> 117. The intellectual property rights in the program would be acquired by Sheffield save for those in any improvement in the Java-based Simcyp program that might be provided solely by Sponsors. The aim of the Simcyp Project was to produce a marketable program which Sheffield would either market itself or would agree commercial terms with a Sponsor or with a third party to enable that other party to market the program.

> The Research Agreement did not give Cyprotex any direct entitlement to those marketing rights but, instead, merely provided Cyprotex with a non-contractual expectation that it would be in a favourable position to negotiate marketing rights from Sheffield once the Programme of Research had been successfully completed. This expectation was one that the Research Agreement gave all the other Sponsors as well.
>
> 118. Secondly, it is helpful to bear in mind that the relevant principles of the general law of copyright governing the authorship of computer programs and software were known to and were in the minds of both Dr Leahy of Cyprotex and Dr Roberts of the TTO.
>
> 119. Thus, it would have been known to both parties that the author of the Simcyp Java-based program would acquire copyright in that program unless the Research Agreement provided otherwise, that joint authorship in that program would only arise if the additional input from Sheffield was substantial and consisted of authorship of the computer program and that Sheffield wanted to retain its copyright in the MathCAD program and to obtain copyright in whatever Java-based Simcyp program was produced."

44. The judge held (paragraph 120) that, with that background in mind, it was clear that the Research Agreement should be construed in the following manner:

> "(1) In Appendix 5 the words "Sponsor Cyprotex - contribution £17,000" were to be read in the light of the parties' understanding that Cyprotex were to provide sponsorship in kind in the form of the necessary programmer with experience drawn from the Virtual Human project whose work would fulfil the Programme of Research, such sponsorship being valued in the sum of £17,000 for the purposes of the Research Agreement in general and for the purposes of clauses 5 and 6 and the fourth paragraph of Appendix 1 in particular.
>
> (2)Other sponsors would provide their respective cash contributions as set out in Appendix 5.
>
> (3)All sponsors, including Cyprotex would review the Simcyp program in its state following successful completion of the first phase and would provide suggestions for its improvement and additional features which could be added during phase 2. The Research Agreement envisaged that all Sponsors including Cyprotex would provide data and know-how to assist in the overall development of the Simcyp program which would be drawn from both their commercial experience and their Research and Development programmes.

> (4)All Sponsors would be granted by Sheffield, by virtue of clauses 8, 9(e) and 9(g) of the Research Agreement, non-exclusive, world-wide, irrevocable, royalty-free licences to use: (i) Resulting Intellectual Property (i.e. the Java-based developed Simcyp program); (ii) Sheffield's relevant background IPR (i.e. the MathCAD program, algorithms and Sheffield's data bases) and (iii) all written material produced by Sheffield about the Simcyp program for which Sheffield owned the copyright.
>
> (5) The phrase: "The date of this agreement" which occurred in clause 9(a) of the Research Agreement meant 12 June 2000, on the basis that the Research Agreement did not take effect until December 2000 but was intended to have retrospective effect, work on the Programme of Research only started on 12 June 2000. Thus, even though clause 4 of the Research Agreement stated that the start date was 1 March 2000, the Period of Performance would be taken to have started on 12 June 2000 on the basis that 1 March 2000 was stated to be subject to variation by agreement which the parties had impliedly done.
>
> (6)The MathCAD program was to be regarded as "background IPR" under clause 9(a)."

45. The judge stated that, once these considerations had been taken into account, it could be seen that the Java program was intended to be covered by the definition of Resulting Intellectual Property in clause 9(b), namely "individually and collectively all inventions, improvements and/or discoveries which are conceived and/or made in performance of the Programme of Research". He said (paragraph 121):

> "Essentially, the Java-based program could be seen to be an improvement of the Background IPR but it might also be said to have contained elements which were discoveries. This conclusion arises because the prime object of the Research Agreement was to improve the Background IPR so that what resulted was improved IPR which would be commercially marketable. In other words, "Resulting Intellectual Property" was to include the windows-based software that was to be produced by the Programme of Research.
>
> 122. Clause 9(c) provided that all rights to Resulting Intellectual Property under the Programme of Research should belong in the first instance to Sheffield."

46. The judge then acknowledged that there were two principal potential difficulties in this construction. First, that the words of clause 9(d), standing alone ("improvements … relating to the Programme of Research made solely by employees of the Sponsors shall belong to each Sponsor respectively") were on the face of them apposite to cover Dr Edwards' programming work. Second, the definition of Resulting Intellectual Property in 9(b) required that the inventions, improvements etc referred to

should be “conceived and/or made by one or more members or other agents of the university acting either on their own or jointly with one or more employees of a sponsor”.

47. As to the wording of clause 9(d), the judge emphasised the need to construe it against the contractual background already set out, on which basis he held that the words were inapposite to vest copyright in the program in Cyprotex for four related reasons (paragraph 124).

48. First, the entirety of the Java-based program carried out by Dr Edwards was not aptly to be regarded as an invention, improvement or discovery *relating to* the Programme of Research; it was *itself* the entire program and therefore more appositely treated under clause 9(b) which related to work done *in performance of* the Programme of Research.

49. Second, clause 3 of the Research Agreement provided that the research would be conducted by Dr Rostami, Professor Tucker and Dr Lennard.

50. Third, the Java-based program was in any event not made *solely* by Dr Edwards but was made by him with the assistance of Dr Rostami. The criterion of whether an improvement had been made solely by a sponsor so as to take that sponsor’s work outside the ambit of clause 9(b) and into (d) was not whether the maker would be sole author for the purposes of copyright. All that was required was joint action in performance of the Programme of Research. Given the wording of the clauses, contribution from an employee of Sheffield would be sufficient to make the relevant improvement a joint improvement, even though that contribution did not amount to work which was itself susceptible of intellectual property right protection.

51. Fourth, since clause 9(d) related to work made solely by employees of sponsors with the result that rights “shall belong to each sponsor respectively”, it appeared that the clause was designed to cover the type of work that all sponsors could undertake such as that involved in supplying data, general know-how and suggestions for the improvements which were encouraged to be supplied under the Research Agreement.

52. Finally, the judge pointed to the commercially unreal consequences of a conclusion that clause 9(d) covered the Java-based programming work. He described them as follows in paragraph 125:

> “1. Sheffield would not be able to grant effective licences to third parties once the Java-based program had been developed since, in granting such a licence, Sheffield would have had to: "ensure that the rights of each sponsor under the agreement would be fully protected" (clause 9(f)). Sheffield would not be able to grant third parties an effective licence to use the program whilst simultaneously protecting Cyprotex's copyright in the Java program.

2. Cyprotex would not be able to use its copyright in the Java program effectively since it would still be obliged to retain in strict confidence, and not to divulge to third parties, any information, technical knowledge, know-how, experience, data or business background disclosed to it whilst developing the Java-based program during the execution of the Programme of Research. In licensing the use of the Java-based programme to third parties, Cyprotex would inevitably have to break that obligation of confidence and so, if it complied with its obligation of confidence, its ability to use its copyright in the Java-based program would be virtually eliminated.

3. Sheffield's right to publish material arising from the Programme of Research provided for in clause 8 of the Research Agreement would be largely compromised. This ongoing right of publication was clearly intended to be a significant right on which Sheffield placed considerable store.

4. The rights of other Sponsors provided for by clause 9 of the Research Agreement would be significantly diminished, if not eliminated. This would particularly be the case for the licensing rights in Simcyp that they were given by that clause.

5. The expectation that each Sponsor was given … that they would be consulted by Sheffield about any extension of the contract once the Programme of Research had been completed [see end of Appendix 1 at paragraph 30 above] would be a meaningless expectation since Sheffield would be unable to hold meaningful discussions with the Sponsors on that subject. Only Cyprotex would be able meaningfully to consult its co-sponsors about such an extension given that Cyprotex would be holding the essential copyright to the Simcyp Java-based program that would be needed by Sheffield to enable it to provide for the marketing rights in Simcyp."

53. He continued at paragraph 126:

"Overall, the commercialisation of Simcyp would be virtually impossible since neither Sheffield nor Cyprotex [would] be able to market the developed program effectively. Such limited marketing as could be undertaken at all could only be undertaken by Cyprotex. Thus, Cyprotex would obtain both commercialisation and intellectual property rights in Simcyp that neither Cyprotex nor Sheffield envisaged or expected that it would obtain at the time that the Research Agreement was signed. However, overall, the commercialisation potential of Simcyp would have been severely compromised. Moreover, Cyprotex would gain a considerable advantage over its co-sponsors which was not provided for expressly in the Research Agreement and which none of them could have envisaged or agreed to when entering into the Research Agreement."

The Parties' Submissions

54. Mr Purvis for Cyprotex has not sought to attack any of the findings of fact made by the judge, or his findings as to the common understanding of the parties as set out at paragraphs 27 and 43 above. However, he submits that the wording of paragraph 9 of the Research Agreement, which specifically deals with the question of IPR in relation to the Programme of Research is clear and comprehensive and should be treated as a self-contained code unamenable to the interpretation placed upon it by the judge as a result of what the judge himself recognised was a "strained construction". He accepts that Cyprotex occupied a position in relation to the Programme of Research different from that of the other sponsors, but makes the point that, at the time the Research Agreement was both drafted and signed, the parties were aware of Dr Edwards' role as an employee of Cyprotex to whom the wording of clause 9(d) was apt to apply. Nor, despite the fact that Cyprotex's role was different from and greater than that of the other sponsors, was any special provision made for them to be differently treated. Thus any prior or collateral agreement or understanding between Cyprotex or Sheffield should not be treated as a guide to contractual construction, the contract being one whose provisions extended equally to the other sponsors and was stated to form the entire agreement between the parties.

55. So far as the judge was influenced by the commercially 'unreal' consequences of the construction advanced by Cyprotex, Mr Purvis submits that the consequences are equally uncommercial in yielding a result whereby Cyprotex, having provided the valuable services of Dr Edwards for a Programme of Research which would not only advance the Simcyp Project but would advance and assist Cyprotex's own 'Virtual Human' Project, should now be unable to make use of Dr Edwards' programs other than for the purposes of their own internal research and development under clause 9(e).

56. Shortly put, Mr Purvis' submissions are these. First, the structure of clause 9(a)-(d) is simple and may be paraphrased as follows. IPR which already existed at the date of the Research Agreement are not affected; rights in work done by Sponsors belong to the Sponsor responsible; rights in work done by Sheffield belong to Sheffield. It was plainly intended to be a code covering all work done in the course of the project.

57. Mr Purvis relies on the following facts admitted or found by the judge:

a) by the time the Research Agreement became 'operative' i.e. on the date of the last signature being added on 21 December 2000, Dr Edwards had already written most of the programs which would thereby belong to Cyprotex as part of "background IPR" retained by them under clause 9(a).

b) All the work in writing the programs, both before and after that date was done solely by Dr Edwards (see paragraph 25 above) and the rights in such programs therefore belong to and remain with Cyprotex under clause 9(d).

c) None of the work involved in writing programs produced by Dr Edwards was done by employees or agents of Sheffield, acting either on their own or jointly with a Sponsor, so that none of the rights in the programs fell to the university under clause 9(b).

58. As to the judge's four reasons set out at paragraphs 48-51 above:

i) The judge made an invalid semantic distinction between an invention, improvement or discovery relating to the Programme of Research and one which was itself the entire Programme.

ii) Albeit clause 3 of the Research Agreement provided that the research would be conducted by members of the university, it was not in fact so conducted. It was done by Dr Edwards.

iii) The judge was wrong to state that the Java-based program was not made *solely* by Dr Edwards but with the assistance of Dr Rostami. The judge had recognised elsewhere (for reasons stated at paragraphs 82-85 of his judgment), that Dr Rostami was *not* a joint author of the Simcyp Program. If he was not a joint author, then no more was he a joint 'maker', the sole maker being Dr Edwards.

iv) In the case of computer programs, the only act which, as a matter of English or common sense, could amount to the 'making' of the programs, is the act of 'authorship'. When considering authorship, copyright law does not engage in an artificial analysis but assesses who was responsible for the creation of the actual work in issue. Anyone who could properly be described as 'joint maker' of the work would be a 'joint author' from the point of view of copyright law.

v) The judge was wrong to exclude the programs written by Dr Edwards from the work covered by clause 9(d) by limiting such work to "the type of work that all sponsors could undertake". There is nothing in clause 9(d) which requires that the work should have been of such a type.

59. As to the judge's list of "commercially unreal" consequences (see paragraph 52 above), Mr Purvis points out that in relation to point 2 the use to which Cyprotex wishes to make of the Programme (as earlier recorded by the judge at paragraph 70 of the judgment) would not present the difficulties postulated by the judge because it would not involve the use of Sheffield's algorithms or databases, nor the MathCAD program initially provided, from which Dr Edwards' work on the Java Program development and code writing was developed. He also makes a number of other points of less significance which I do not propose to set out in detail because, as it seems to me, they lack substance and in any event fail to meet the difficulties noted by the judge at paragraph 126 in his judgment (see paragraph 53 above) in the event

that Sheffield and Cyprotex were unable to agree upon the further development and marketing of the project.

60. Mr Purvis submits that, in effect, the judge did not approach the wording of the contract objectively and apply it in a straightforward manner to the facts of the case. He started by taking the special case under consideration, namely the programs created by Dr Edwards, decided that they should not belong to Cyprotex and simply deemed the terms of clause 9(b) to be satisfied when his findings of fact precluded it. Having rightly rejected the argument of Sheffield at trial that Cyprotex (via Dr Edwards) carried out the work in their capacity of 'other agents' of the university under clause 9(b), (clause 13(e) precluding such a conclusion), the judge adopted a construction which was not open to him on the facts. Clause 9 was not addressed simply to the question of ownership of the programs written by Dr Edwards. Rather, it set out a complete code to be applied to all works created in the course of the project and should have been construed at that level of generality.

61. In his submissions on behalf of Sheffield, Mr Antony Watson QC has argued in support of the judge's reasoning. In addition, and as a preferred 'short cut' through the problems of interpretation faced by the judge, Sheffield, under its respondents' notice, revives in modified form its argument advanced at first instance that there existed between the parties an agreement or arrangement applicable to the IPR which was separate from and independent of the Research Agreement. By that arrangement Dr Edwards, as an employee of Cyprotex, was commissioned to carry out the task of writing the Windows-based software described in the Programme of Work which under the terms of the Research Agreement was the responsibility of Dr Rostami, Professor Tucker and Dr Lennard (see clause 3) and which was anticipated by the requirement in the Programme of Work for the recruitment by Sheffield of "a suitable computer programmer" (see the third paragraph of Appendix 1). Accordingly, in carrying out the work set out in Appendix 1, Dr Edwards acted and/or fell to be treated as an "other agent" of the university as provided for in paragraph 9(b) of the Research Agreement.

62. Mr Watson submits that the judge, who was plainly attracted to this interpretation as fitting the facts and actions of the parties, erred when he rejected it on the ground that it was precluded by clause 13(e), which provided that nothing in the Research Agreement should create or be deemed to create a relationship of principal and agent between the parties (see paragraphs 129-131 of the judgment). Mr Watson submits that neither paragraph (a) nor paragraph (e) of clause 13 was apt to preclude or supersede a bilateral agreement between Sheffield and an individual sponsor (Cyprotex) in respect of (i) the recruitment of a programmer to produce the software referred to in Appendix 1 or (ii) the method by which the obligation of an individual sponsor (Cyprotex) to pay to Sheffield the sums provided for in clause 5 should be treated by Sheffield as having been performed, provided that Sheffield's obligations to all sponsors under the Research Agreement were otherwise unaffected. He also submits that sub-paragraph (e) of paragraph 13 simply did not cover the position where the agency said to arise between the parties was created by such a separate bilateral agreement.

Discussion

63. In my view the argument advanced under the respondent's notice is correct. The Research Agreement contemplated, and indeed required, so far as all the Sponsors were concerned, that Sheffield should recruit a programmer to produce the software. However, it did not contain or purport to govern the terms of any agreement or arrangement by which that was to be done. Clause 13 was thus not apt and should not be construed so as to exclude or affect the basis upon which it was done. So far as clause 13(a) is concerned, while the Research Agreement and the documents referred to in it form the entire agreement between the parties (i.e. all the parties) it plainly does not contain or supersede the agreement between Sheffield and Cyprotex in relation to the services of Dr Edwards in respect of his recruitment as computer programmer. That agreement was reached in accordance with the terms of the Research Agreement and for the purposes of carrying out Sheffield's obligations under it. However, it was not "an agreement between the parties relating to [the] subject matter" of the Research Agreement; it was a bilateral agreement or arrangement which related to the services of Dr Edwards who was to carry out the work for which Sheffield was responsible vis-à-vis the Sponsors including Cyprotex. So far as clause 13(e) was concerned, the "agency" created between Sheffield and Dr Edwards for the purposes of carrying out the work was not said, or apt, to be regarded as created by the Research Agreement, but by the separate agreement between Cyprotex and Sheffield. In that connection Cyprotex were not acting qua Sponsor under the Research Agreement, but as the supplier of Dr Edwards' services to Sheffield. The fact that part of the payment for Dr Edwards' services was agreed to be the waiver by Sheffield of the Sponsor's contribution otherwise payable by Cyprotex under the Research Agreement does not affect that position.

64. That being so, given (i) the relevant contractual background to the agreement as found by the judge (see paragraph 43 above) and (ii) the overall structure of the Research Agreement, whereby Sheffield carried the responsibility for the research to be financed by the Sponsors and was to license to the Sponsors the copyright in written material produced in performance of the research (clause 8), as well as all the Resulting Intellectual Property under clause 9(e) and Sheffield's own background IPR (clause 9(g)), it is clear the term 'agent' in clause 9(b) was intended to include the programmer recruited by Sheffield. Thus, the work done by Dr Edwards *in performance of* the Programme of Research plainly fell within the term "other agent[s] of the university" for the purposes of clause 9(b). Insofar as he was and remained in fact an employee of a sponsor (Cyprotex) who provided his services to Sheffield, clause 9(d) requires to be read subject to the provisions of 9(b) in Dr Edwards' case. That can readily be done if, as the judge held, clause 9(d) is construed as intended to cover not the Programme of Research itself but work *relating to* the Programme of Research of a kind which all Sponsors might separately undertake for the purposes of making input into the Programme of Research, notably work done by Sponsors in connection with their role on completion of the first stage of the Programme of Work when they were permitted to propose additional features to be incorporated into the Programme for their benefit (see the fourth paragraph of Appendix 1).

65. On the basis of such a construction (i.e. Dr Edwards effecting the work as the agent of Sheffield in its Programme of Research) the need for the judge to adopt what he recognised as a 'strained' construction of clause 9(b) falls away. Were that not so, however, and if contrary to my view, Dr Edwards ought properly to be regarded as having done his work on the Programme of Research in his capacity as an employee of Cyprotex, I would still adopt the construction of the judge broadly for the reasons which he gave.

66. Against the surrounding circumstances and contractual background found by the judge, and because of the commercially unreal consequences for Sheffield and all the Sponsors save Cyprotex who intended and expected to deal with Sheffield as conductors of the research and owners of the relevant copyright and licensing rights (see paragraphs 52-3 above), it is in my view appropriate that the court should interpret the wording of clause 9 in a manner which reflects not only the structure and apparent intention of the multipartite contract but the basis upon which the parties in fact proceeded. In my view the judge was right to reject the test of joint/sole ownership in the field of copyright as the criterion or benchmark governing the question whether or not the work done under the Programme of Research qualified as Resulting Intellectual Property under clause 9(b) and/or was to be regarded as Sponsor IPR under clause 9(d).

67. For this purpose, the judge held that the (albeit limited) use made of the MathCAD-program and the overall input of Dr Rostami as controller and director the Programme of Research was sufficient. In my view, this was a proper conclusion. Dr Rostami and Dr Edwards together settled the initial specification for phase 1 of the project. Dr Edwards was supplied with a copy of the Simcyp-MathCAD program following which the specification which he produced was modified in a number of respects by Dr Rostami and a series of drafts were exchanged before the final specification was signed off in August 2000. Although Dr Edwards was the author of the program in that he wrote the actual computer code, he worked under the direction of Dr Rostami and the two were in regular communication by telephone and e-mail whereby Dr Rostami explained numerous aspects of what was required as a general guide for Dr Edwards' work. Once phase 1 was complete, there was further joint consultation and consideration of the further features suggested by the Sponsors (see paragraph 32 above).

68. The documents at trial included over 200 e-mails between Dr Rostami and Dr Edwards between June 2000 and September 2001. These demonstrated that the original Programme of Research was the sole conception of the university. The process of designing and creating Simcyp Java, while carried out by Dr Edwards, involved continuous interaction between Dr Rostami and Dr Edwards from the submission of the MathCAD version for conversion to a Java format and the drafting of the specification to the provision by Sheffield of additional models and algorithms and suggestions for the design of the GUI.

69. I share the judge's view that there is an important distinction to be made between the phraseology of 9(b) and 9(d). Clause 9(b) defines Resulting Intellectual Property in the broadest possible terms as meaning "individually *and collectively* all inventions,

improvements and/or discoveries *whether or not patentable or capable of other intellectual property protection*" and whether "*conceived and/or made* by one or more members or other agents of the university … *in performance of* the Programme of Research". In other words it is concerned with anything produced in carrying out the Programme of Research to which the university has contributed either by way of conception or creation. Further, by covering improvements etc not capable of intellectual property protection, it creates a contractual right in the university, as against the other sponsors, to exploit such creations or conceptions. That is important because it fits in with the other provisions of the Research Agreement whereby the university grants to each sponsor an irrevocable and royalty-free licence to use the RIP, as defined, for the purpose of internal research and development in support of the sponsor's own business (clause 9(e)). It is the university which has the right to grant licences to third parties for the purposes of commercial exploitation (clause 9(f)). Clause 9(d) on the other hand covers work 'relating to' the Programme of Research as distinct from work done 'in performance of' it.

70. In those circumstances, I would reject Mr Purvis' criticisms of the judge's reasoning set out at paragraph 58 above. I would also reject his submission that the factual findings of the judge (see paragraph 57 above) precluded the construction which he later adopted. In that respect, point (a) is a bad one. Although by the time the Research Agreement received its last signature in December 2000 Dr Edwards had written most of the programs, it is common ground between the parties on this appeal that the Research Agreement, the essentials of which were drafted long before Dr Edwards started his work, was intended to have retrospective effect as from the commencement of the programming work on 12 June 2000 (see paragraph 38 above).

71. So far as points (b) and (c) are concerned, for the reasons I have already set out, it does not seem to me that the fact that it was Dr Edwards who developed and wrote the programs precludes a finding that he did so as an agent of Sheffield, alternatively as an employee of a sponsor (Cyprotex) working jointly with Dr Rostami.

72. Finally, so far as Mr Purvis submits that the construction produces a commercially unreal result for Cyprotex in relation to their own ability to advance their "Virtual Human Project" by making use of the programs written by Dr Edwards, it seems to me that such a submission founders upon the following points. First, Cyprotex are of course entitled to use those programs for the purpose of their own internal research and development under clause 9(e), although they cannot without the consent of Sheffield use those programs for the wider purpose of their commercial exploitation, whether as part of their own "Human Voice" project or otherwise. Second, Cyprotex were, at the time when the parties were on good terms, prepared to enter into the Research Agreement (as they did) on the basis of a non-contractual expectation that they would be in a favourable position to negotiate marketing rights from Sheffield once the Programme of Research had been successfully completed. Third, the construction argued for by Cyprotex would place them in the 'driving seat' in relation to the exploitation of the Programme of Research and the power to grant licences under it in a manner never intended or contemplated by the Agreement or, in particular, the other Sponsors.

Conclusion

73. I would uphold the judge's decision and dismiss the appeal.

Lord Justice Clarke:

74. I agree.

Lord Justice Ward:

75. I also agree.